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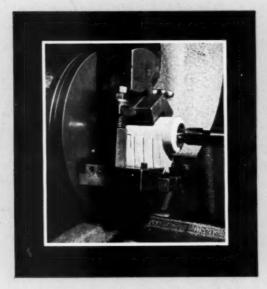
SERVING THE AND

HABRICATED METAL PRODUCTS INDUSTRY

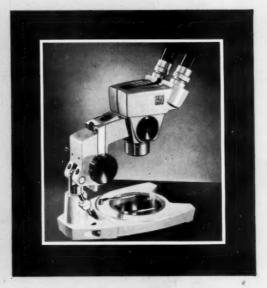
FROM RAW METAL TO FINISHED PRODUCT

EPON® RESIN does it!

Protects precision optical instruments from abrasion and perspiration acid



AO Microscope body with Epon finish is chucked, faced to size, bored, reamed and threaded. Yet the tough Epon finish comes through without a nick or scratch.



A smooth coating of Epon resin-based paint protects AO Stereoscopic Microscopes from abrasion, chemical deterioration and mechanical impact.

Here's how:

At the American Optical Company, Instrument Division, painted castings for scientific and ophthalmic instruments frequently are machined after the finish has been applied. What happens to the finish? Nothing. Why? It is protected by the amazing abrasion-resistance of Epon resinbased coatings.

But scuff-resistance is only part of the story. Customer complaints about perspiration acid peeling the coatings on instruments presented another very serious problem.

To counteract this problem, AO chemists put an Epon resin-based paint to the test. Castings with 2 coats of Epon resin-based paint and others with 2 coats of ordinary paint were immersed in the same solution of 5% sodium chloride, 5% acetic acid, 3% isovaleric acid, 3% butyric acid and water for 96 hours. Result: holes had formed in the ordinary paint finish. The Epon resin coating ... still in flawless condition.

If you have a coating problem, Epon resin-based paint may be your answer. Its unsurpassed abrasionand chemical-resistance makes it an ideal all-purpose industrial coating.

Call Shell sales offices for names of suppliers. Write for the Epon resin coatings story, "Planning to Paint a Pyramid?" You'll find it interesting and informative.

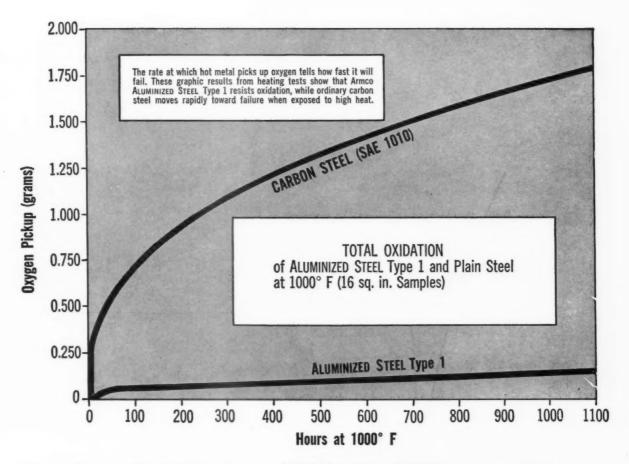
Epon resins are the epoxy polymers made exclusively by Shell Chemical Corporation.

SHELL CHEMICAL CORPORATION

CHEMICAL SALES DIVISION, 380 Madison Avenue, New York 17, New York

Illente - Besten - Chicage - Cleveland - Detreit - Housten - Les Angeles - Newark - New York - San Francisco - St. Louis IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited - Montreal - Teronto - Vancouver





Test Shows How Well Armco ALUMINIZED STEEL Resists Heat

Armco ALUMINIZED STEEL® Type 1 (steel hot-dip coated with aluminum) stands up to heat because it withstands destructive scaling. This test shows how well.

Above 900 F, an iron-aluminum alloy forms on the surface of Armco Aluminized Steel Type 1. It becomes a tightly adherent refractory material that protects the base metal. Ordinary carbon steel lacks this protection. The powdery and flaky oxides which form on the surface of carbon steel fall away, exposing it to further attack.

Economical Double Protection

Armco Aluminized Steel Type 1 not only resists heat, it fights corrosion at the same time. In fact, this special 2-in-1 metal beats back deadly combinations of heat and corrosion better than any metal in its price class.

If parts of your products are exposed to a combination of heat and corrosion, it may pay you to get all the facts about Armco Aluminized Steel Type 1. It could be a low-cost solution for your problems.

Complete information on this special coated steel is readily available. Just call your nearby Armco Sales Office or write us at the address below.





After 1100 hours at 1000 F. Right—Armco ALUMINIZED STEEL Type 1; Left—SAE 1010 Steel.

ARMCO STEEL CORPORATION

1537 CURTIS STREET, MIDDLETOWN, OHIO

SHEFFIELD STEEL DIVISION • ARMCO DRAINAGE & METAL PRODUCTS, INC. • THE ARMCO INTERNATIONAL CORPORATION





from the men and women who are...

THE O. HOMMEL COMPANY

Dept. MPM-1257
PITTSBURGH, PA.

LOS ANGELES, CALIF.

December · 1957

VOL. 14 · NO. 12

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(including finish)

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COMING!

A MAGNETIC surface heating unit for domestic ranges COMING!

A SANDWICH type construction for refrigerator cabinets

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METAL PRODUCTS MANUFACTURING

FROM RAW METAL TO FINISHED PRODUCT

A trade publication devoted to the interests of the metal products manufacturing industry with special editorial attention to home appliances. The editorial scope covers design, engineering, market and statistical information and technical and practical information on plant facilities and all phases of manufacturing "from raw metal to finished product." Free controlled circulation to top metal to finished product." Free controlled circulation to top management, purchasing, engineering and key plant management and supervision in metal product manufacturing plants. To others, subscription price is \$8.00 per year, domestic. To all other countries \$10.00 per year (U.S. funds). Single copies, \$1.00.

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Latex paints for metal cut fire hazard

You'll solve a lot of plant problems when you switch to metal finishes made with latex.

In the first place, you'll reduce fire hazard and may lower your insurance rates because, in these modern paints, water replaces flammable thinners. You'll eliminate disagreeable paint odors. You'll effect safer, more pleasant working conditions with latex metal paints.

And you needn't worry about rust resulting from the water

thinner. These latex paints for metal will not cause rusting. Moreover, a latex paint system will fit easily into your present shop set-up without heavy investment in new equipment. Check your industrial finish supplier now.

THE DOW CHEMICAL COMPANY, Midland, Michigan, Plastics Sales Department 1849UU-1.



YOU CAN DEPEND ON





Dow makes paint raw materials

The Dow Chemical Company does not make paint but has been for years a major supplier of many basic raw materials used by the paint industry. In 1946, Dow intro-duced the first latex for the manufacture of paint and since that time has worked closely with the paint industry in developing new paint products based on a series of Dow latexes.

Water-thinnable latex paints—a growing market

Since the first successful latex paint was developed for application to interior walls, the use of latex in paints of this type has increased tremendously. In step with this rapid growth, The Dow Chemical Company and the paint industry have long conducted research on the application of latex for paints and finishes in the industrial field.

Latex metal finishesproduct of intensive research

Because latex paints are water-thinnable, there were many problems to be solved before the excellent properties inherent in Dow latex could be successfully applied in the metal finishing field. But these problems were met and solved. Then followed extensive tests in the laboratory and field. Now the results are in . . . water-thinned letex finishes for metal are a reality.

Latex basic to many metal finish applications

The primary research on latex finishes done by Dow and carried into complete paint formulations by metal finish manufacturers, can now be applied to specific product requirements of the industrial finish user. Since each consumer of industrial finishes will have very specific requirements, it now remains for the paint supplier to provide specific formulations based on latex for each application. Dow suggests that you work closely with your industrial finish supplier in developing finishes to your specifications based on this important new raw material, Dow latex.

THE DOW CHEMICAL COMPANY

METAL PRODUCTS STATISTICS

a current report on available production, shipment and sales figures for important products in the appliance and fabricated metal products manufacturing field

GAS WATER HEATERS - September shipments 217,100, 0.5 per cent below '56; first three-quarters 1,952,900, 11.1 per cent below '56.

GAS RANGES, BUILT-IN - September shipments 21,000, 36.4 per cent over

'56; first three-quarters 143,600, 19.7 per cent over '56.

GAS RANGES, FREE STANDING — September shipments 176,400, 7.6 per cent below '56; first three-quarters 1,344,700, 12.5 per cent below '56.

GAS FURNACES — September shipments 93,100, 1.8 per cent below '56;

first three-quarters 529,000, 14.8 per cent below '56.

GAS FIRED BOILERS — September shipments 15,200, 4.4 per cent below

'56; first three-quarters 73,500, 4.4 per cent over '56. GAS CONVERSION BURNERS — September shipments 30,100; 6.5 per cent below '56; first three-quarters 118,400, 17.9 per cent below '56.

ELECTRIC REFRIGERATORS — September shipments 265,200, 4.4 per

cent below '56; first three- quarters 2,627,500, 12.9 per cent below '56. ELECTRIC FREEZERS — September shipments 79,000, 0.1 per cent below '56; first three-quarters 745,300, 6.4 per cent below '56; first three-quarters 745,300, 6.4 per cent below '56. ELECTRIC RANGES, BUILT-IN — September shipments 40,300, 0.7 per cent over '56; first three-quarters 313,800, 5.8 per cent over '56. ELECTRIC RANGES, FREE STANDING — September shipments 84,500, 5.4 per cent below '56; first three-quarters 700,200, 3.5 per cent below '56. ELECTRIC WATER HEATERS — September shipments 69,800, 7.4 per cent ELECTRIC WATER HEATERS — September shipments 69,800, 7.4 per cent below '56; first three-quarters 587,000, 15.3 per cent below '56.

ELECTRIC DISHWASHERS — September shipments 36,700, 5.2 per cent below '56; first three-quarters 292,100, 7.4 per cent below '56. ELECTRIC FOOD WASTE DISPOSERS — September shipments 53,500,

6.8 per cent below '56; first three-quarters 397,100, 14.9 per cent below '56. COMBINATION WASHER-DRYER — September factory sales 19,749, 118

per cent over '56; first three-quarters 132,557, 95 per cent over '56.

WASHERS, AUTOMATIC & SEMI-AUTOMATIC — September factory sales 293,795, 2 per cent over '56; first three-quarters 2,083,933, 13 per cent

WASHERS, WRINGER & ALL OTHER - September factory sales 90,504, 13 per cent below '56; first three-quarters 668,909, 23 per cent below '56. ELECTRIC DRYERS* — September factory sales 113,169, first threequarters 564,521.

ĜAS DRYERS* — September factory sales 51,299, first three-quarters 250,-

IRONERS — September factory sales 4,203, 27 per cent below '56; first

three-quarters 30,495, 26 per cent below '56.

VACUUM CLEANERS — September factory sales 302,869, 5.4 per cent below '56; first three-quarters 2,372,893, 16.1 per cent below '56.

METAL FURNITURE - September shipments were 5 per cent above '56; first three-quarters were 4 per cent below '56.

TELEVISION — August shipments 490,849, 8.4 per cent below '56; January-August inclusive 3,460,100, 8.0 per cent below '56.

RADIO** — August shipments 769,770, 33 per cent over '56; January-

August inclusive 4,788,006, 6 per cent over '56.

COMPRESSOR BODIES (Including Automobile Units) — Shipments for July 288,811, 21.5 per cent below '56; January-July inclusive 2,999,491, 5.6 per cent below '56.

STEEL SHIPPING BARRELS & DRUMS — August shipments 2,993,130, 2.5 per cent below '56; January-August inclusive 24,083,077, 9.2 per cent below '56.

STEEL PAILS - August shipments 6,636,784, 2.2 per cent below '56 January-August inclusive 52,036,782, 8.4 per cent below '56.

TYPEWRITERS - August factory shipments 147,105; September factory shipments 155,060; January-September inclusive 1,230,423.

Sources for this information: Gas Appliance Manufacturers Association, National Electrical Manufacturers Association, American Home Laundry Manufacturers Association, Vacuum Cleaner Manufacturers Association, National Association of Furniture Manufacturers, Electronic Industries Association, and Air-Conditioning and Refrigeration Institute, U.S. Dept. of Commerce.

*Note: The above 1956 data have been adjusted to reflect combination washer-dryer sales separately. Combination sales are not counted as either an automatic washer or an automatic dryer. For 1956, breakdown of gas and electric dryer data from which gas and electric combination data have been subtracted, cannot be released without disclosing individual company information. **Does not include automobile radios. Totals reported in October and November also

do not include automobile radios.

Automation comes to the finishing industry.

ACCOATING

Primes as it Topcoats with new **©**

Ultrafio

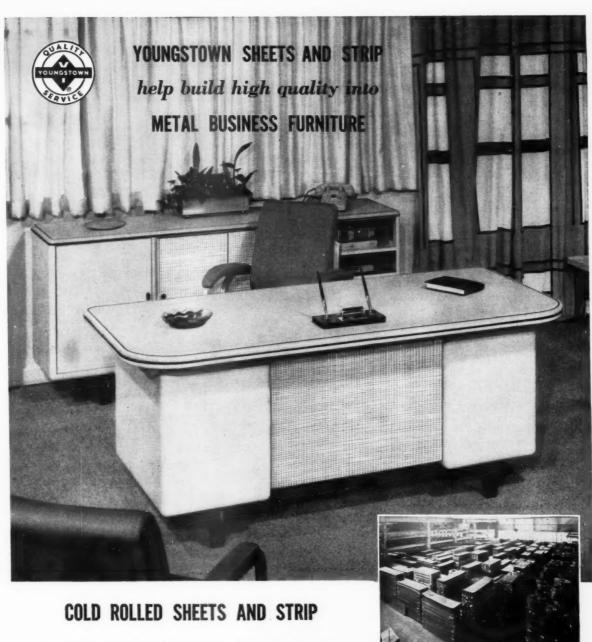
Now you can flowcoat in one coat without prior priming! Miraculous, new IC* Ultraflo One-coat Enamels give phosphatised metal a blemish-free, mirror-like finish requiring little or no supplemental spray in just one operation! What's more, the high gloss finish has all the corrosion-resistance and durability of a conventional two-step primer and topcoat!

And that's not all! IC Ultraflo One-coat Enamels provide excellent "hang" around edges and holes, instantaneous bubble release, and require minimum time in the solvent chamber. It all adds up to faster conveyor line speeds, and tremendous savings in both material and labor costs.

Perhaps you have felt that *your* product would not lend itself to flowcoating. You'd be amazed at the variety of complex parts with large surface areas that can be successfully flowcoated with IC Ultraflo Enamels! You owe it to yourself to find out. Get in touch with your nearest IC Finishes specialist *today* or send for Ultraflo Bulletin No. 216.



Headquarters Office: 224 McWhorter St., Newark 5, N. J. Factories: Chicago, Ill. • Cincinnati, Ohio • Elizabeth, N. J. • Los Angeles, Calif. • Newark, N. J. • Mexico City, Mex. • In Canada this product is made by Aulcraft Paints Limited, Toronto, Ontario, and sold under its trademark. *IC and Ultrafic are trademarks of Interchemical Corporation.



Modern executives look for high quality in their metal office furniture . . . quality both in appearance and usefulness. To help meet this demand, YOUNGSTOWN supplies quality-controlled steel sheets and strip as basic raw material to the nation's leading fabricators.

Photos courtesy The General Fireproofing Co.

YOUNGSTOWN'S 56 years of steelmaking knowhow provides sheets and strip with the right combination of tensile strength, surface finish and ductility. This high quality YOUNGSTOWN steel assures top-production runs of even the most difficult-to-form parts.

Our many satisfied customers report these facts about YOUNGSTOWN sheets and strip:

Increased Production - Fewer Rejects - Accurate, Fast Forming - Reduced Fabrication and Die Costs

make YOUNGSTOWN SHEET & TUBE steel your continuing specification for lower production costs and improved
product quality. Our nearest District Sales Office will be happy to supply any additional information or metallurgical assistance. Call YOUNGSTOWN today!

THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Yoloy Steel
General Offices - Youngstown 1, Ohio
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... for sheer ruggedness and dependable power

YOU CAN ALWAYS

RELY on GI

Fractional H.P. Motors 1/40 H. P. to 1/1100 H. P.

In any industry, extra care in manufacturing means an extra margin of dependability. Nowhere else is this "extra" so important as in the manufacture of motors — for a product is only as good as the motor that powers it. When you choose fractional hp. motors, remember GI's unmatched record for dependability. It's the ability to "take it" that has made GI first choice with the greatest names in American industry.

GI's complete manufacturing facilities mean economy, too — as well as on-time delivery. And if you have special fractional hp. problems — GI's design staff is at your disposal. You can Rely on GI!

Write for complete specifications and quantity price quotations today!



4-pole, shaded pole AC Induction Type





MODELA

MODELC

THE GENERAL INDUSTRI DEPT. GF . ELYRIA, OHIO

INDUSTRY MEETINGS

APPLIANCE MANUFACTURERS

Institute of Appliance Manufacturers, Shoreham Hotel, Washington, D. C., December 2-4.

INDUSTRIAL ENGINEERING

Industrial Engineering Conference, sponsored by Illinois Institute of Technology, Illinois Institute of Technology Campus, Chicago, Dec. 5-6.

HOME FURNISHINGS

International Home Furnishings Market, The Merchandise Mart, Chicago, January 6-17, 1958.

HOUSEWARES

National Housewares Manufacturers Association's 28th National Housewares Exhibit, Navy Pier and Drill Hall, Chicago, January 16-23, 1958.

HEATING, AIR-CONDITIONING

American Society of Heating and Air-Conditioning Engineers, Inc., Annual Meeting, Pittsburgh, Pa., January 27-29,

MAINTENANCE & ENGINEERING

Plant Maintenance and Engineering Show, International Amphitheatre, Chicago, January 27-30, 1958.

ELECTRICAL ENGINEERS

American Institute of Electrical Engineers' Winter General Meeting, Hotel Statler, New York City, February 2-7,

REINFORCED PLASTICS

13th Annual Technical and Management Conference, Reinforced Plastics Division, Society of the Plastics Industry, Inc., Edgewater Beach Hotel, Chicago, February 4-6, 1958.

ELECTRICAL MANUFACTURERS

National Electrical Manufacturers' Association, Edgewater Beach Hotel, Chicago, Ill., March 10-13, 1958.

GAS APPLIANCES

Gas Appliance Manufacturers' Assocition's Annual Meeting, The Greenbrier, White Sulphur Springs, W. Va., March 31-April 2, 1958.



HERE'S WHAT SANTA

BRING YOU IN 1958



- LOWER MILL BATCH COST!
- ➤ WIDER BURNING RANGE!
- ▼BETTER ADHERENCE!
- FRITS WITH MORE WORKABILITY!
- FEWER REJECTS!
- LOWER COSTS IN YOUR POR-CELAIN ENAMELING OPERATIONS!

There really is a Santa Claus

Our "plant tested" ceramic engineers can bring you proof that there is a "Santa Claus" who can deliver plant tested frits which will give you the desired results.

Ing-Rich Frits are the result of "Know How" gained through the day in and day out working together of our ceramic engineers and practical enameling experts in our own large enameling plant.



INGRAM-RICHARDSON, INC.

OFFICES, LABORATORY AND PLANT . FRANKFORT, INDIANA



THE MPM Spotlight



"Foodarama," by Kelvinator, has maximum "out front" storage for both fresh and frozen foods in less than four feet of floor space. The 1958 model, with 16.3 cubic foot capacity, offers special storage areas for every food, such as this slide-out fruit basket. Three shelves slide out for convenience in loading and unloading. Fresh food compartment holds 11.3 cubic feet, and freezer five cubic feet or 175 pounds of frozen food. Door contains shelves and twin "handi-chests."



"WEIRZIN" solved our painting problems,"

reports the DAVIS PRODUCTS COMPANY of Niles, Michigan



Weirzin, with its tight electrolytic zinc coating, permits long lasting painted finishes because it gives complete protection against underfilm corrosion.

And that's just one of the many advantages of using Weirzin electrolytic zinc-coated steel sheets. Let's hear

what else the Davis Products Company has to say about Weirzin.

"We've worked with coated sheets in building our space-saving kitchen equipment for over 10 years. But never before have we found a sheet with Weirzin's rust resistance and dependable and uniform workability, besides its great affinity for paint. And believe us, using Weirzin, we get much longer life out of our dies today.

"Our customers notice the difference, too. For instance, many Florida motel owners tell us they prefer our units because salt air does not seem to affect the metal in our units. We feel Weirzin deserves a big hand in pleasing our customers."

Need a sheet with these cost-saving characteristics? A sheet that takes to paint naturally? That starves rust? That increases life of your dies? And that can be worked and shaped to the very limits of the steel base itself? Then send for our free Weirzin booklet which will give you full information about these versatile electrolytic zincoated steel sheets. Just write Weirton Steel Company, Dept. R-32, Weirton, West Virginia.



WEIRTON STEEL COMPANY

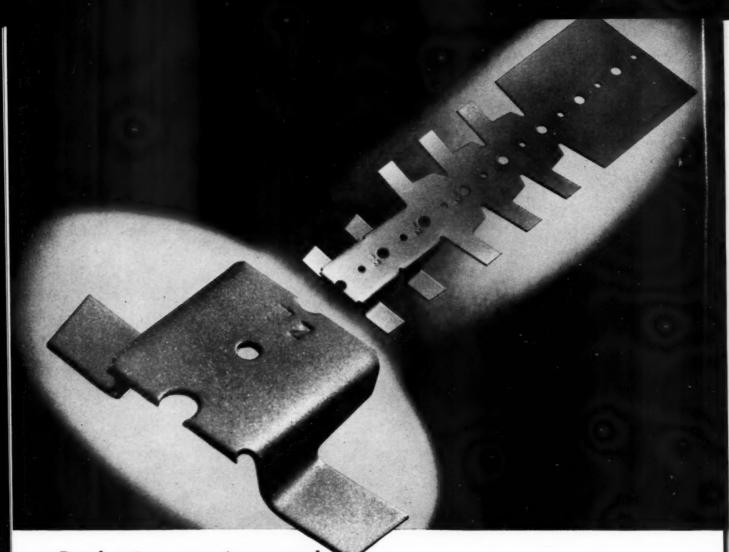
WEIRTON, WEST VIRGINIA

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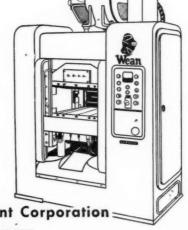
Production rate increased 400% on progressive forming operation

Production Rate: Conventional Press — 75 pieces per minute
Wean "Flying-Press" — 300 pieces per minute

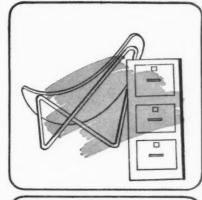
This small progressive forming is called a keeper plate. It is stamped and formed out of .035 gauge strip steel. Length of index is 3". This part was produced on a conventional press at the rate of 75 per minute. Using the same dies, a Wean "Flying-Press" increased production to 300 parts per

But ultra high speed production is only one facet of the revolutionary "Flying-Press". Average set-up time for example is at least 25% faster than for conventional presses. A single upper bed adjustment plus a jog button on the central control panel speeds actual die setting and at the same time provides an important safety feature.

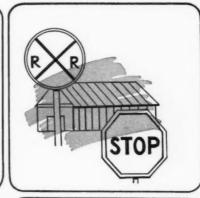
But why not get the complete story by writing today for your copy of the "Flying-Press" Brochure.

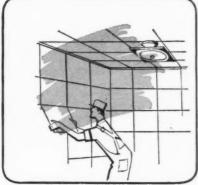


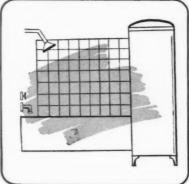
Equipment Corporation

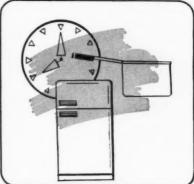












Du Pont Porcelain Enamels for Aluminum Create Profitable New Enameling Volume

Today, appliances, furniture, architectural tile, signs, machinery—more products than ever before—are made of lightweight, durable aluminum. This expanding market offers you an excellent opportunity to build enameling volume with Du Pont porcelain enamels for aluminum.

Du Pont enamels come in an unlimited range of lustrous colors. Practically indestructible, they form a remarkably rugged finish-to-metal bond. These enamels are lightfast, resist weathering, corrosion, heat, impact and salt-water attack. And they are easily applied with ordinary enameling and firing procedures. Whether you are a fabricator who now supplies unfinished aluminum or an enameler who would like to add aluminum to the materials you now finish... or convert your whole operation to aluminum finishing... investigate Du Pont enamels for increased enameling volume and profits.

TECHNICAL ASSISTANCE... Du Pont manufactures porcelain enamels ... but does no enameling. As a pioneer developer in these finishes, we can offer you useful information on how you can expand your enameling volume by adding aluminum enamels to your line of finishing services. Mail the coupon today.

PORCELAIN ENAMELS FOR ALUMINUM



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

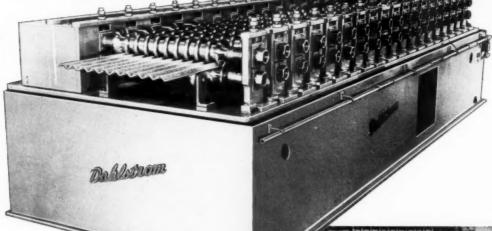
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Elec	tro	chemi	cals	Departm	en	, W	ilmington	98,	De

- Please send me Technical Bulletin CP 4-454 and illustrated folder on Porcelain Enamel for Aluminum.
- Have your technical representative call with further details.

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CORRUGATING SHEETS with

Dahlstrom

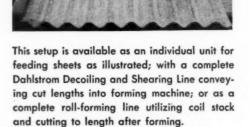
A major Building Products Manufacturer uses this setup for cor-

rugating 20 through 28 gauge galvanized steel, aluminized steel, plain and embossed aluminum.

Requires only vertical adjustment for gauge range. Roller die tooling available for $\frac{1}{2}$ " or $\frac{1}{2}$ " depth. Excellent control of coverage and depth. Operating speed 150 FPM.

featuring:

- All welded construction
- Roll shafts mounted on anti-friction bearings

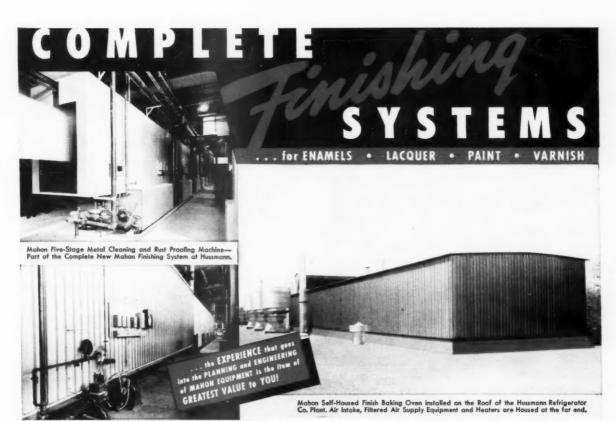


Other gauge ranges also available — send complete detailed specifications for quotation.

Dahlstrom MACHINE WORKS

Roll forming machines, flying cut-off presses, coil reels, coil lifts, roll straighteners, press feed lines, decoiling and shearing lines.

4233 W. Belmont Ave., Chicago 41, III., Phone: SPring 7-3670



Mahon Dry-Off Oven at Exit End of Cleaning and Rust Proofing Machine. Oven Controls are visible in the foreground.



48 ft. Mahon Hydro-Filter Spray Booth in foreground. Another 24 ft. Spray Booth for reverse side painting is visible in the background. Note Filtered Air Diffusers in the Ceiling.



Equipment Room between Finish Baking Oven and Air Supply Room This room houses Heating Equipment and Controls for both Units

Mahon Installs THIRD COMPLETE FINISHING SYSTEM in Hussmann Refrigerator Plant!

In addition to several smaller projects, the Mahon Company has installed three Complete Finishing Systems for the Hussmann Refrigerator Co., St. Louis, Mo. The latest one, illustrated here, was designed to paint steel shelving. It consists of a five-stage Metal Cleaning and Rust Proofing Machine, a Dry-Off Oven, two Hydro-Filter Spray Booths, an Air Conditioned Spray Room, and a Finish Baking Oven. The Cleaning and Rust Proofing Equipment, Dry-Off Oven and Spray Room are located inside the plant; the Filtered Air Supply Equipment and the Finish Baking Oven are housed on the roof. This is a typical Mahon Finishing System designed to occupy a minimum of floor space inside the plant, and to do a particular finishing job efficiently and economically. Repeat orders from customers over a period of years is an unquestionable expression of confidence in the Mahon organization, and it is an unspoken tribute to Mahon engineering, and to the quality and operating efficiency of Mahon equipment. If you have a finishing problem, or are contemplating new finishing equipment, you, too, will want to discuss methods, equipment requirements and possible production layouts with Mahon engineers . . . you'll find them better qualified to advise you, and better qualified to do the all-important planning, engineering and coordinating of equipment, which is the last the production of the first factors at a significant planning. is the key to producing the finest finishes at minimum cost. See Sweet's Plant Engineering File for information, or write for Catalog A-658.

THE R. C. MAHON COMPANY • Detroit 34, Michigan SALES-ENGINEERING OFFICES in DETROIT, NEW YORK and CHICAGO

Engineers and Manufacturers of Complete Finishing Systems—including Metal Cleaning, Pickling, and Rust Proofing Equipment, Hydro-Filter Spray Booths, Dip and Flow Coaters, Filtered Air Supply Systems, Drying and Baking Ovens, Cooling Tunnels, Heat Treating and Quenching Equipment for Aluminum and Magnesium, and other Units of Special Production Equipment.

MAHON

NEMA holds 31st annual convention

election of officers feature of meeting; stress fair pricing of electrical goods

THE annual convention of the National Electrical Manufacturers Association held in Atlantic City, N. J. November 11-14 elected a strong slate of officers for the coming year. In addition, those in attendance were admonished to establish a fairer price program within their individual companies.

W. V. O'Brien, New York, N. Y., vice president and general manager, Apparatus Sales Division, General Electric Company, was elected president of the National Electrical Manufacturers Association at NEMA's 31st annual convention.

Mr. O'Brien succeeds A. A. Berard, Mount Vernon, N. Y., president of Ward Leonard Electric Company

B. C. Neece, New Britain, Conn., president, Landers, Frary and Clark, was elected treasurer to succeed F. F. Loock, Milwaukee, Wis., president of Allen-Bradley Company.

In addition to the officers, the following vice presidents also were elected:

J. C. Sharp, Chicago, Ill., president and general manager, Hotpoint Company, a Division of General Electric Company.

A. D. R. Fraser, Rome, N.Y., president, Rome Cable Corporation.

Frank H. Roby, Detroit, Mich., vice president-sales, Square D Company.

J. L. Singleton, Milwaukee, Wis., vice president, industries group, Allis-Chalmers Manufacturing Company.

N. J. MacDonald, Elizabeth, N.J., president, The Thomas & Betts Company.

Name new board members

Six new members were elected and eight incumbent members reelected to the NEMA Board of Governors. New members elected

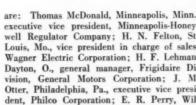
are: Thomas McDonald, Minneapolis, Minn., executive vice president, Minneapolis-Honeywell Regulator Company; H. N. Felton, St. Louis, Mo., vice president in charge of sales, Wagner Electric Corporation; H. F. Lehman, dent, Philco Corporation; E. R. Perry, ized Fibre Company, and James F. Whitehead, Jr., St. Louis, Mo., executive vice president Day-Brite Lighting, Inc.

Must receive fair prices

Mark W. Cresap, executive vice president of the Westinghouse Electric Corporation, said that "a very clear warning is signalled" by a 25 per cent decline in return on stockholders equity in the industry over the past five years.

"We cannot assure the long-term health of the body of our industry unless we receive fair prices for our products - prices which permit reasonable profits - profits which enable use to support our research and development tradition, to generate funds for physical expansion and improvement, and to remain attractive to the investing public.

"This stress on reasonable price levels is not intended as a declaration which is self-serving to the industry. A strong and growing electrical equipment industry is important to the national defense, to the electrical utility industry, to manufacturing industries generally, to users of electrical products in the home, and finally to employees - both those now at work, and those who will join with us in the future," Mr. Cresap concluded.



Dayton, O., general manager, Frigidaire Division, General Motors Corporation; J. M. Otter, Philadelphia, Pa., executive vice presimington, Del., president, National Vulcan-

tion Dept.

McDANIEL HEADS NEW HOTPOINT SALES-DISTRIBUTION DEPT.

A re-organization program, placing full responsibility for sales and distribution of Hotpoint's complete line of ap-

pliances and television is a new company department headed by John F. McDaniel, has been announced. He formerly was general manager of the Range Department. His new title

is general manager, Sales and Distribu-

All distribution, sales, merchandising, and advertising functions are now integrated in the new Sales and Distribution Department to permit improved inventory control, and a unified sales approach to distributors, dealers, and consumers.

Hotpoint Appliance Sales Company, part of the new department, is a major arm of the company's distribution, with 91 distribution points, and 23 district offices throughout the country. Mc-Daniel also has responsibility for contacts with Graybar Electric Company, and independent distributors.

In announcing the new organization, McDaniel said that Hotpoint would immediately launch the most intensive drive in the company's history to build and strengthen its dealer organization. New policies will soon go into effect outlining a far reaching plan of action embracing quality control, franchise, pricing, product service, and distribution.

McDaniel said that Hotpoint will tell its story to dealers in a greatly-expanded program of trade paper advertising. There are also to be programs for substantially-increased national advertising, sales promotion, and sales training

New functions reporting to McDaniel are: L. J. DiAngelo, Manager - Advertising and Merchandising; L. E. Ankersen, Manager - Special Markets; C. C. Gramer, Manager - Distribution Development and Planning; W. G. McNeal, Manager - Product Service; and Hasco regional managers in Atlanta, New York and Chicago.

The Range Department is now combined with the Customline-Dishwasher Department under Edward M. Haines, as the Kitchen Appliance Department. The other product departments are Television Receiver, Home Laundry, and Re-

frigeration.



Newly elected officers of the Electric Housewares Section of the NEMA are shown at left. l.-r. S. M. Ford, pres. of The Silex Co., chairman of the Section's advisory committee; J. P. McIlhenny, v.p. — sales, Waring Prod. Corp., Section chairman, and A. O. Wolf, v.p. and general manager, Hamilton Beach Co., vice chairman.



Time rolls on, and with it our wish for continued happiness and good health for you and yours.

1425 South 55th Court • Cicero 50, Illinois

IN BUSINESS MACHINES, TOO.

Stranonsteel Quality STANDS OUT

• These machines are encased in Sharonart*—the popular rolled-in surface pattern steel. Sharonart* is one of many steels developed by Sharon engineers during the past half century to help the Business Machine Industry make products look better, work more efficiently and last longer.

To change the style—change the steel to Sharonart Literature and sample kits upon request. Sharonart* is a trademark of the Sharon Steel Corporation.



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Machine application of dry-drawing compounds

less cleaning of dies and press areas necessary — machine application more economical than hand application—sheets easier to handle, and can be stored for relatively-long periods of time between coating and use

by W. D. Anthony . MANUFACTURING ENGINEERING DEPARTMENT, WESTINGHOUSE ELECTRIC CORPORATION

Overall view of dry-drawing application machine, showing man starting to feed.



The Columbus plant of Westinghouse is one of the largest major appliance plants in the country. With a plant this size any improvement in the operation, whether it be

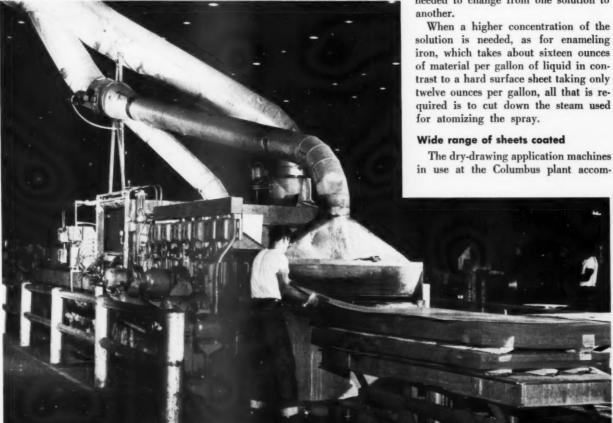
large or small, almost always has a significant effect in overall production economy. Improvements in production are not always valued solely because of a measurable saving in operational

costs. Often an improvement results in a cleaner plant and easier handling of materials on the production line. One such improvement at this plant was the installation of two machines for the spray application of dry-drawing compounds.

Dry-drawing compounds are coming into wider use, now that improvements have been made in the compounds themselves, and especially in the methods of application. To many, perhaps, the disadvantages of immersing raw steel stock into dry-draw solutions and then providing some means to dry the coatings prior to fabrication did not offset the advantages dry-draw compounds offered.

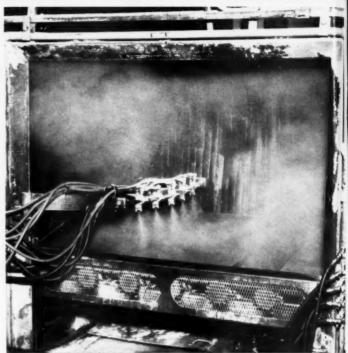
The first method of applying drydrawing compounds, from the standpoint of history, was by immersion. The second method tried was the roll coating method which is still in wide use at the present time. One of the disadvantages of both of these methods of application is that it is necessary to have a standby tank, or to allow a minimum of two hours down time for the conversion to a new concentration. With a spray machine, only sixty seconds is needed to change from one solution to

in use at the Columbus plant accom-





Man picks up sheet for feeding into machine with suction cup device attached to glove.



Sheet goes through machine, and is seen through window being sprayed about half-way through the process.

plish the three-fold task of cleaning the raw stock thoroughly, spraying it with the dry drawing compound solution, and drying the sheets — all automatically.

One of the two machines is capable of taking sheets 48 inches wide, and the other will take sheets 60 inches wide. A wide range of sizes of sheets, from 36 inches to 120 inches long, are processed in these machines, and from $17\frac{1}{2}$ inches to 48 inches wide in one machine, and $17\frac{1}{2}$ inches to 60 inches wide in the

second machine. Thicknesses vary from .020 to .087 inches, which allow a large variety for the many different requirements of this plant.

Many types of stampings are made from sheets which have been sprayed with dry-draw compounds. Following is a typical list:

Doors for refrigerators.

Pans for "humidifiers" and meat keepers.

Roaster pans.

Exterior and interior laundry equip-

ment - large tub parts.

Wrapper sheets, top and service panels for laundry equipment.

Dishwasher top and bottom covers, round model.

Tops for dishwasher and table top water heater.

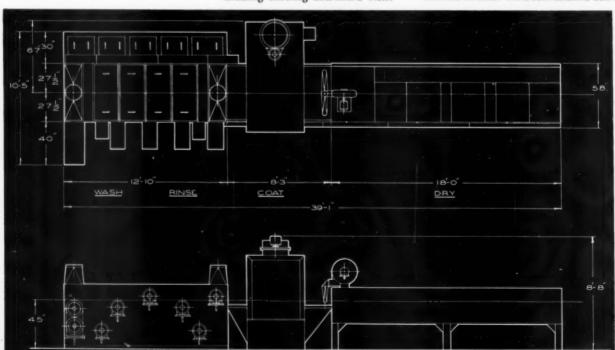
Miscellaneous parts where deep-draw is required.

A variety of types of steel are processed in these machines, including coldrolled, hot-rolled, titanium-bearing steel, and vitreous enameling steel.

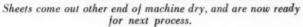
Typical 48" process line used in the spray application of dry-drawing compounds.

drawing showing downward view.

Bottom drawing is side view, with top DRAWING COURTESY WHITE-ROTH MACHINE CORP.









Stack is metal banded for transport by crane to another location for shearing.

Cleaning

The cleaning stage of the machine consists of the application of an alkaline solution and a water rinse, both maintained at a temperature of 200°F. As the sheet passes through the cleaning stage, a series of nylon brushes scrub the sheet while it is flooded with a 2oz. per gallon solution of the alkaline cleaner. The sheet continues through another series of nylon brushes which scrub the sheet while it is flooded with 200°F, water. The sheet is then squeezed

and blown with an air blast from a series of nozzles to remove excess water.

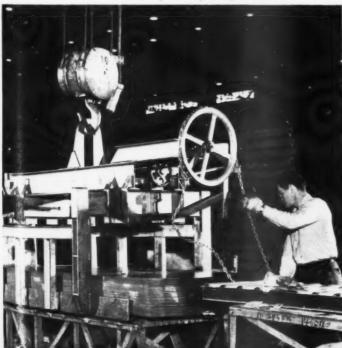
The speeds of the conveyors carrying the sheets through the machines vary. On one machine, the speed is fixed at 45 feet per minute. On the other, the speed is variable from 32 to 60 feet per minute.

Applying the draw compound

For the spray application of the drawing compound, standard spray guns are used. For the 48-inch machine there are eight guns, four at the top and four at the bottom, and on the 60-inch machine there are ten guns, five at the top and five at the bottom. These guns spray a mixture of dry-draw compound and steam at a temperature of 200°F. As stated previously, the concentration of the drawing compound can be varied to suit the requirements of the sheet passing through the machine by altering the amount of the steam used for atomization.

Where necessary, roller leveling is to Page 58 ->

Operator lowers crane and adjusts load in place for transpor- Feeding sheets into power squaring shear for cutting to size tation to power squaring shears.



and shape required.



Engineering a quiet waste disposer

tests show unit is 60-per cent quieter
than any disposer previously produced,
and its efficiency, durability,
and speed of operation were improved



TODAY'S TREND TOWARD openroom home design is focusing greater attention on the need for quiet kitchen appliances. The kitchen in

many new homes has become a part of the living area. Appliance sounds, therefore, tend to interfere with conversation, reading, television, and the hi-fi set.

The Waste King Corporation recently introduced a new quiet waste disposer that will help a great deal in reducing sounds in the kitchen of today's homes. The Los Angeles firm has been pioneering in the design of quiet appliances for many years in an effort to cut down kitchen noises. This research culminated in the introduction last year of an extremely-quiet dishwasher.

According to tests by an independent laboratory, the new Waste King "Super Hush," as the new disposer is designated, is sixty-six per cent quieter than any other unit, while disposing of normal food waste. A similar model with a one-third horsepower motor instead of a one-fourth horsepower motor is called the "Imperial Hush." This model is made to operate at a faster rate but employs the same sound deadening components.

In the process of reducing the level of sound from the new disposer, the Waste King engineers have also increased the speed of operation to a marked degree. By improving mechanical design, the grinding action of the new disposer reduces the food waste to smaller particle size than ever before. This new development has been given the name "liquifying action" because of the ease with which the waste is washed down the drain.

The combination of improved grinding action and the reduction in the sound of operation has resulted in a significant improvement in waste disposers. Through the diligent efforts of the engineering staff of Waste King, today's home will benefit greatly.

Besides disposers and automatic dishwashers, the firm's line includes built-in ovens and ranges, and indoor incinerators.

Glass fibers absorb sound

Primarily responsible for the sharp noise reduction in the new "Hush" line of waste disposers is a half-inch glass

fiber blanket completely enclosing the unit. This blanket tends to absorb inherent disposer noise — the clatter of food waste impinging against the unit's abrasive metal wall.

On the "Imperial" and "Super Hush" models, the sound-absorbing glass fibers line a noise-deadening plastic shell which encases the entire disposer. The combination of the glass fiber blanket and the plastic shell substantially reduces the sound produced by the disposing process.

Noise reduction

The following is a description of the component parts of the disposer, and how each contributes to reduce noise of operation:

 Plastic acoustical shell and glass fiber blanket.

A half-inch fiber glass blanket and a shell of sound-deadening plastic completely encase the disposer. Noise from the liquifying chamber is soaked up by the glass fibers as it bounces back and forth between the metal disposer casting and plastic outer shell. Both the plastic shell and glass fibers are fungus and pest-proof.

2. Rubber sink mounting.

All of the "Hush" models are suspended from the sink by thick rubber cushions, much as engines are mounted in automobiles. These cushions absorb vibration noises and prevent the sink from serving as a sounding board. The new mounting is as thick as possible to achieve a high degree of sound isolation.

3. Rubber drain cushions.

A rubber cushion separates all Waste King disposers from drain and pipe connections to prevent vibration noises from being transmitted through the plumbing system.

4. Splash guard.

Waste King's patented rubber splash guard acts with water from the tap to form a seal across the waste feed hole. This helps hold sound in the grinding chamber. The guard also prevents water and food waste from splashing into the sink.

5. Precision sleeve bearings.

Ball bearings have been replaced by precision sleeve bearings to minimize friction and vibration noises. 6. Improved balance.

All moving parts have been balanced to achieve precision and accuracy. This reduces vibration noise to a minimum.

Grinding action

The operation of Waste King's disposers has been improved with the following engineering developments:

1. 1725 RPM turntable.

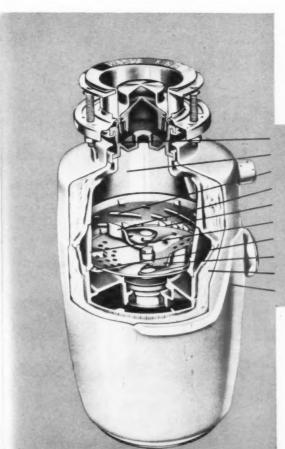
The turntable spins at the bottom of a circular grinding chamber at 1,725 revolutions per minute. As food waste is washed onto the turntable, it is hurled toward the chamber with great force.

2. Atomizer ring.

Retractable, anti-jam flow conductors, mounted on the turntable, gather and force the waste against a file-like atomizer ring, girdling the lower portion of the chamber. This abrasive action is continued until the waste can be washed out through tiny escape holes below.

3. Surgical steel blade.

A whirling surgical steel blade, located safely beneath the rotating turntable, clips any surviving stringy material into short pieces.



SUPER HUSH CUSHION
LIQUIFYING CHAMBER
CHANNELING RIDGES
SWIVEL FLOW-CONDUCTORS
CALIBRATING EXIT SLOTS
ATOMIZER RING
SURGICAL STEEL BLADE
CENTRIFUGE TABLE
GLASS FIBER
POLYSTYRENE OUTER SHELL

A cutaway of the Super-Hush Model



Beautiful design is a part of Waste King's disposers as shown in the Imperial model.

4. Flow conductors.

The new flow conductor impellers, patterned after those used in Waste King's heavy-duty restaurant disposers, reduce grinding time 25 to 35 per cent while maintaining the anti-jam feature of conventional swivel impellers.

The impellers are scientifically positioned on the spinning horizontal turntable so that centrifugal pressure will lock them in abrading position against the atomizer ring. This abrasive pressure is only lessened when sufficient resistance occurs to slow the drive motor. Only at that moment, and not before, do the impellers retract for an instant to prevent overloading.

Because the flow conductors do not continually bounce out of position like swivel impellers, they also reduce impeller noise and wear.

The flow conductors are made of stainless steel, as are the horizontal turntable and atomizer ring. This helps prevent corrosive electrolytic action.

5. Moisture funnel.

An improved moisture funnel drains off drops of water before they can leak into the motor and corrode it. The newly-designed funnel has been enlarged so that it cannot become clogged.

6. Drive motor.

A one-quarter horsepower motor drives the horizontal turntable at 1,725 revolutions per minute. The split-phase, 120volt, 60-cycle motor is permanently lubricated. The one-third horsepower "Imperial Hush" motor is a capacitor start, 120-volt, 60-cycle motor, and is likewise permanently lubricated.

Stainless Steel Gives Your



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Product a Competitive Edge

LOOK AT YOUR PRODUCT from the woman's angle. Sales success depends upon her acceptance. She wants a product that will keep its good looks—that is easy to clean and keep clean—that resists rust and corrosion—that doesn't tarnish—that is tough and strong to resist denting and scratching.

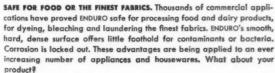
Republic ENDURO® Stainless Steel gives your product all of these advantages—plus eye and buy appeal. ENDURO, used for brightwork or as a functional part of the product, is an unmistakable sign of top quality that women recognize and appreciate. A quality that gives your product a competitive edge.

NOW LOOK AT YOUR PRODUCT from the production angle. You and your suppliers can fabricate ENDURO Stainless

your suppliers can fabricate ENDURO Stainless Steel on your present equipment without difficulty or major change in procedure. And remember, ENDURO requires no lacquering, plating or electro-chemical treatments to enhance its famed corrosion resistance and lasting beauty. Republic Metallurgists will help you choose the proper ENDURO types to add sales stimulus to your product. Mail the coupon.

HIGH STYLE AND HARMONY. Manufacturers of many major appliance items are skillfully using the lustrous beauty of ENDURO to complement and harmonize with other materials and finishes. It enhances the over-all design, yet does not compete for attention.







EASY TO CLEAN and keep clean. ENDURO is easily cleaned with a simple soap and water rinse. There's no applied surface to chip, flake or peel away. Nothing to tarnish or fade. Republic also supplies two other outstanding steel sheet products. Republic Continuous Galvanized, used for liners, etc., offers excellent ductility and a tight zinc coating. Republic Electro Paintlok, for housings and other parts, can undergo severe forming operations before painting and still retain its superior paint-adhering quality. Send coupon for facts.

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and Steel Products

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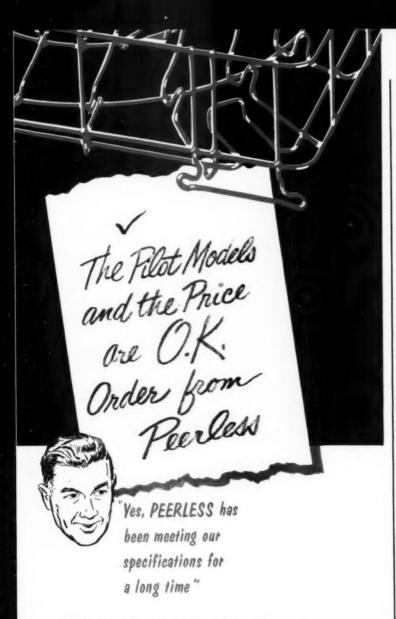
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(Made possible by pre-attached primary fastener)



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PN NUT Used where a pilot for easy locating, a strong weld and space limitations are important factors. Ideal for use in confined corners, flanges and narrow chan-



WF NUTS Used where the nut serves a mounting pur-pose or greater thread engagement is required than is normally provided by other type weld nuts.



SN NUT Used where assemblies are being spotwelded together and a piloted nut is required.



WS NUT For applications on rugged assemblies where it is necessary to anchor nut securely in blind location.



RH NUTS Used where it is desirable to have the body of the nut go through the sheet or where extra long thread engagement is need-



WW NUTS Used where a hermetic seal is required to prevent leakage of air, gas, water or dust on blind locations.



ND NUT Used where a large nut is needed for bridging or joining two sheets or for extra strength.

OVER 50 YEARS OF BETTER FASTENING

Samples and information available upon request.

THE OHIO NUT AND BOLT COMPANY

43 FIRST AVENUE

BEREA, OHIO

DECEMBER . 1957 MPM

Tape answers stainless metal forming problem

how a Chicago fabricator solved a cold roll-forming problem in the production of built-in stainless steel kitchen appliances

PHOTOS COURTESY 3-M CO.

A PRESSURE-SENSITIVE tape only two mils thick has greatly assisted in a successful forming process at Kinkead Industries, Inc., a Chicago metal fabricator.

The firm had received a contract to form door frames for built-in stainless steel kitchen appliances using coils of Type 302 stainless steel with a No. 2 "pot and pan" finish.

Since part of the frame would be exposed when the appliance door was opened, the section in view had to be perfectly free of mars and scratches. And here was where the trouble began.

While the steel ribbon was passing through the cold roll-forming machine it picked up a slight pressure line from the roller dies. The line was barely noticeable, but it was short of the perfect surface the customer wanted.

In the process of shaping the steel ribbon into the frame pattern, the dies—which exert heavy pressure—were contacting the steel and a pressure line developed at the bend. A buffing operation to remove the line was out since it not only would be costly but would not duplicate the "pot and pan" finish already on the steel ribbon.

The solution was fairly obvious. The metal ribbon had to be kept from com-

ing in contact with the dies at the critical area. But the real problem was in finding the proper material to interpose between the die roller and the steel.

The job would require a very thin material, one which would stay attached to the steel until the finished frame came out of the forming machine. The first thought that came to mind was pressure-sensitive tapes since they were being used in other areas of the plant. Production men thought tapes might work as they are thin and stay attached until removed.

Since the steel ribbon moves through the machine at a rate of 80 feet per minute, the tape would have to be applied automatically. Investigation revealed that a machine did exist which could do the job.

It is a flat surface tape applicator which normally dispenses short strips of tape automatically at a maximum rate of 75 applications per minute. With a few minor adjustments — primarily to prevent the machine from cutting the tape — the applicator was installed at the head of the forming machine to apply continuous lengths of tape to the fast moving ribbon.

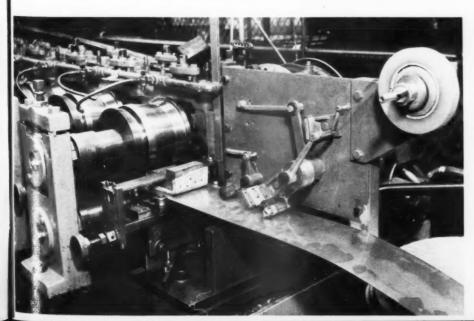
One problem remained, however.

What particular tape would be best for the job? Kinkead first tried a regular crepe backed masking tape — which had to be discarded for two reasons. First, the old headache of pressure from roller dies popped up. Under their intense force the ridges of the crepe backing left very slight, but noticeable, impressions on the formed steel. Second, the ribbon is constantly lubricated with oil as it passes through the series of rollers dies. Since masking tape is not oil resistant, it frequently came loose while the steel was in the machine.

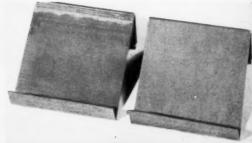
A polyester film tape was then tried. Two mils thick, it is impervious to oil and the film backing is extremely tough.

With the polyester tape, the steel framing came through without the slightest mar. To remove the tape, a pickup wheel synchronized with the speed of the formed ribbon was placed at the rear of the forming machine. The wheel rolls up the tape as fast as the steel comes from the machine.

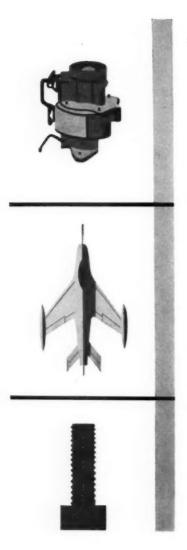
The tape, ¾ of an inch wide, is applied to the steel ribbon approximately 1½ inch from the "far" edge of the steel (as you stand in front of the machine). It covers the area of what will be the exposed corner in the door frame.



A flat surface applicator applies a ¾-inch strip of polyester tape to a stainless steel ribbon as it enters a cold roll-forming machine. The metal is formed into door frames for stainless steel built-in kitchen appliances, and the tape prevents the roller dies from disfiguring the steel. Samples of a taped and untaped section of formed steel illustrate the improvement which results from the tape. Arrow marks the pressure line ■ caused by the roller dies.



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- · Alodine® 1200 for aluminum
- · Permadine® for steel

Lithoform Z forms an amorphous chromate coating on zinc and cadmium surfaces which retards the formation of *white* rust or bloom. It is effective on most types of electrodeposited zinc, zinc die casting alloys, hot-dipped galvanized surfaces, and cadmium plated products.

Alodine 1200 forms an amorphous chromate film on aluminum which becomes an integral part of the metal and improves the natural corrosion resistance of the metal. In addition to protecting unpainted surfaces, it is a durable and tenacious base for paint.

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Write for complete information about these ACP corrosion preventives

AMERICAN CHEMICAL PAINT COMPANY, Ambler 33, Pa.

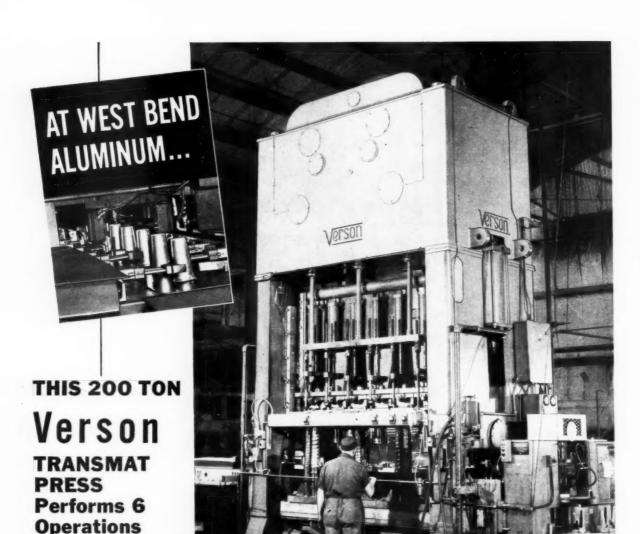
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Materials Round Holes mean UTILITY · BEAUTY · ECONOMY Square Holes ... TOMORROW'S PRODUCTS A MEDIUM OF LIMITLESS APPLICATIONS Slots.... Harrington & King perforated materials offer a challenge to men of ideas. Designers and stylists are discovering an ever-increasing range of applications for perforated materials. For functional or decorative purposes, or where a combination of both is essential, H & K perforated materials are used in more products, in more accessories, in more places than ever before. REDUCES TOOLING COSTS Oblong Holes... The design, pattern and open area for almost every application may be selected from our thousands of perforating dies . . . at no charge for tooling. (If a special design is required, tools will be built to order.) In addition to the savings in tool costs, the perforating process itself is an economical method. MATERIALS PERFORATED BY H&K Harrington & King can perforate practically any material that can be obtained in coils, sheets or plates...from foil-thin to 1" thick. Metallic materials—steel, Triangles.. aluminum, stainless steel, brass, copper, monel, zinc, bronze, etc. Non-metallic materials-plastics, wood composition, paper, cloth, etc. H&K engineers will be pleased to work with you on your requirements. Decorative FILL-IN AND MAIL COUPON TO THE NEAREST H & K OFFICE Designs... arrington & CHICAGO NEW YORK 5640 Fillmore Street 116 Liberty Street Chicago 44, Illinois New York 6, N.Y. Thousands GENERAL CATALOG NO. 62
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ZONE___



Produces 800 Tumblers Per Hour Automatically

In use at West Bend Aluminum Co., West Bend, Wisconsin, this Verson Transmat Press produces 10 ounce tapered aluminum drinking tumblers at the rate of 800 per hour, automatically.

3003 aluminum alloy blanks, .025 x $8\frac{1}{2}$ " diameter, are fed into the press by a blank feeder. The piece is moved by mechanical fingers through the 6 stations of the press.

The 1st, 2nd, 3rd, and 4th stations perform full

draws of 30%, 26%, 24%, and 16% reductions. The 5th draw is a 21% reduction, but only $1\frac{1}{4}$ " deep. A forming operation in the 6th station completes the tumbler except for trimming and buffing.

If you must produce 4000 or more identical stampings daily requiring four or more operations, Verson Transmat Presses can definitely lower your production costs. Let us show you how. Send outline of your requirements.

A Verson Press for every job from 60 tons up.

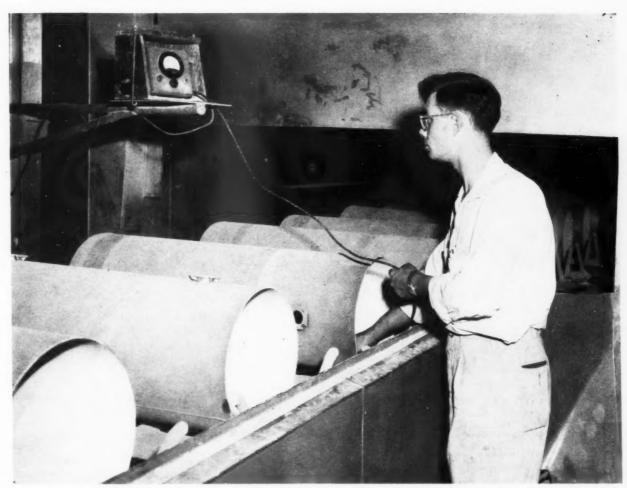


ORIGINATORS AND PIONEERS OF ALLSTEEL STAMPING PRESS CONSTRUCTION

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170



After the glass lined water heater tanks are sprayed with porcelain enamel, and subsequently dried to bisque condition, the thickness of the coating is measured.

A quality control program that really works

to build quality in — rather than "inspecting it in" — was the motive Rheem had in markedly improving maintenance of quality throughout the product line

M_{PM}

Quality control can mean a variety of things to many people, but to Rheem Manufacturing Company it means literally what it says. This is true principally because

the company has proved its approach in making quality control pay off in excellent products, in lower scrap loss, in fewer service problems, and in a happy, productive working force.

Underlying the success of quality con-

trol at Rheem is the basic philosophy of management that: a) people will do good work if they have support and appreciation of effort from all levels of management; and b) no emergency can be great enough to justify "short cuts" through quality standards.

Rheem organized its present quality control program early in 1956 and since that time several marked improvements have loomed forth. Some of these are:

1. Scrap and rework costs were reduced.

2. Production increased with no increase in the number of employees.

3. A decrease in returned goods. For example, tanks returned during the six months prior to the initiation of the formal program were 0.78 per cent. During the six months of the formal program, this figure was reduced more

The editors of MPM wish to credit the following for their help in the preparation of the staff written Exclusive Feature: W. E. Fahey, Resident Plant Manager, George Landis, National Quality Control Manager, Home Products Division, and Joseph De Klotz, Quality Control Manager, Chicago Plant, Rheem Manufacturing Company.



Here, the quality control inspector checks dimensions on a basic water tank part after one of the first steps in manufacture — punching holes.

than 50 per cent to 0.36 per cent.

4. Service calls were reduced.

The Sales Department uses quality as an effective selling tool.

6. The attitude and morale of the employees is at an all-time high.

The present scope of the program includes water heaters, heating, both wet and dry, and air conditioning. This includes four plants: Sparrows Point, Md.; Chicago; South Gate, Calif.; and New Castle, Del.

At the time the program was begun, top management realized that a thorough job of education would have to be done from the supervisor level right down to the man on the line. Each of the four plants operate separate quality control staffs that handle education in addition to other phases of the program. The most important point brought out in the education program was that it is the responsibility of production to build quality into the product. Quality control was set up to function as an aid to production to accomplish this.

Neither inspection nor statistical control has been eliminated. The former is handled by production for the inprocess and finished product. However, it is on a much smaller scale than was formerly required. Statistical control is used by the quality control staff to check incoming materials and purchased parts. A cardex file is kept for this purpose

and, since it has been in use, the system has proven to be an important aid to the purchasing department.

The quality control department at Rheem was patterned after their very successful safety program. This program achieved outstanding results when a central safety committee was established and safety was merchandised to the individual employees. They found that when the employees were sold on safety the program achieved its greatest results. A little over a year ago this method was applied to the quality program. The central quality control committee was established consisting of the quality control manager as chairman

and department heads of the personnel, purchasing, engineering, and production departments. This committee drafted a six-month program and was placed in effect in August of 1956.

Contests stimulate interest

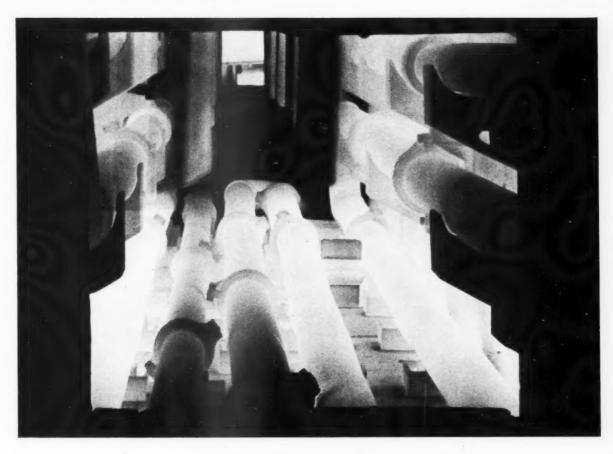
In conjunction with monthly meetings held in each plant by the central quality control committee, contests were started among the employees. Every month one is held, and the winning employees are awarded fine gifts such as cameras and radios. These contests which were designed to stimulate employee interest produced an immediate success. The first contest, a quality slogan contest, was entered by approximately 10 per cent of the employees and, as the months passed, this figure grew up to 40 per cent, indicating an increasing interest. As an added interest builder during the October 1956 contest, 100 silver dollars were passed out to employees who correctly repeated a daily slogan posted throughout the plant. Typical examples of some of the fine slogans that came from this contest are the following. "Safety insures your life Quality insures your job," and "Quality is a stepping stone to better business."

Plan six-month quality programs

The central quality control committee in each plant plans a six-month program to be approved by the plant manager for the entire plant. Each month a separate program is suggested for supervisors and employees. It should be emphasized that this is an individual plant program and is not one sent to the various plants from a central office. At the monthly meeting, often one of the departments in the plant, for example, engineering, will take the floor and tell how they believe quality could be im-

In this view, the inspector is checking the outer jackets of the water heaters after they have been coated with iron phosphate.





NEW!

Enameling furnace radiant tubes made of Inconel!

Installation at Newark Stove follows in-furnace tests indicating a 4-time boost in tube life

These Inconel* nickel-chromium alloy radiant tubes are expected to serve four times as long as conventional tubes; an expectation solidly based on a long-term in-furnace test.

Back in 1951, Newark Stove installed a sample Inconel alloy tube in the "hot" leg of one U-section. It lasted six years. Best previous life was one-and-one-half years.

As early as 1954, however, it became clear that Inconel alloy could reduce radiant tube replacement by an impressive figure. So Newark equipped the "hot" legs of one entire furnace with Inconel alloy tubes. (The long tubes shown above.)

The record to date and (as you can see) the appearance of these tubes strongly reinforces Newark's sixyear life-expectancy estimate.

Other Savings

Other important savings attributed to the new Inconel alloy tubes include less down-time, 50% lower maintenance and material costs, and reduced furnace heating costs...the latter because of a 1/16-inch reduction in tube wall thickness (and hence lighter weight).

Temperatures run from 1300° to 1500°F

At these temperatures and on up, in many cases, to 2000°F Inconel alloy has excellent resistance to oxidation and corrosion from combustion gases. It also retains high strength and withstands thermal shock. Fabricating and welding properties are good, too.

Inconel alloy may help you improve the service life of your high temperature equipment and fixtures. For help in looking into it, call on Inco's High Temperature Engineering Section. They'll be glad to give you an assist. *Registered trademark

The International Nickel Company, Inc.

67 Wall Street New York 5, N. Y.



4-times-the-life Inconel alloy radiant tubes are clamped in place at Newark Stove Company plant.

INCO NICKEL ALLOYS

ROPER... another user of PERMA-VIEW WINDOWS











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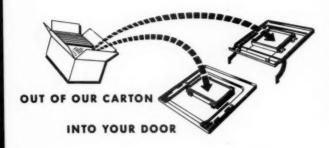
We can manufacture any shape, any size, any thickness to meet your engineering requirements. Alternate methods of attachment may be used.

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-one of the

61 leading range manufacturers using

PERMA-VIEW oven-door windows



PERMA-VIEW helps sell more new ranges. Home makers have come to expect "visible cooking" when they buy a new range. PERMA-VIEW "the window you can see through always," is the logical answer to this demand.

The strong, steel-encased, double-pane PERMA-VIEW window incorporates the finest quality heat resisting glass. It is mechanically sealed to prevent infiltration of vapors and to eliminate "fogging."

The PERMA-VIEW window is pre-engineered and comes to you ready for immediate installation in your range. Let our specialized production lines serve as a part of your sub-assembly facilities. Phone or write us for complete details on the ease and economy of adding this sales feature to your new ranges.





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INCORPORATED

1015 WEST MAPLE ROAD

WALLED LAKE, MICHIGAN



Following a 100-per cent air pressure test of the water heater tanks, the inspector checks the records to ferret out any poor performance and pinpoint the difficulty.

proved, based, perhaps, on some new developments. Each of the departments, in turn, gets a chance to voice opinions on how they feel quality could be improved.

Two of the larger plants in the four plant Rheem system employing the quality control plan have interior house organs — one monthly and one semimonthly. In these publications it is customary to announce winners of quality control contests and other news information pertinent to the program to increase interest and keep it alive.

How it works

At the plumbing division plant in Chicago the quality control group consists of a manager and four inspectors. This group handles all of the quality control for 725 employees. The quality control group prepares standards and procedures covering all operations, and each first line production supervisor is furnished with copies of these booklets. One of the four inspectors functions as a receiving inspector of incoming materials. The others cover the plant from metal fabrication to packaging. The quality control staff reports directly to the plant manager.

The quality control inspectors make the rounds of the plant at least once each hour checking that the standards and procedures are followed as prescribed. If a deviation is noted by the quality control man, he issues a notice to the foreman and, if a critical situation arises where many products are being affected, he issues a stop notice so that immediate corrective action can be taken.

These notices are summarized in the form of a weekly report, copies of which go to the plant manager, the department foreman, production manager, and the control staff.

In a typical tour through the plant an inspector first visits the press and subassembly area. The first part turned out by a die set-up is checked with the press operator and the foreman to the required standards which, of course, any plant will do. The okayed part is then used as a standard to periodically check subsequent pieces at each half hour interval. The quality control inspector makes this periodic check himself and if any deviations occur an im-mediate report is made. The foreman and operator also make periodic checks. It is this periodic checking which distinguishes Rheem's system from any other and eliminates costly and elaborate final inspection.

In sub-assembly where spot welding is a large part of the operation, each operator is required to have samples of

the metal he is welding on hand to make test samples when the quality control man makes his hourly visit. The test pieces are one inch wide by six inches in length. In testing, two of these pieces are welded together and then pulled apart. The weld passes if one of the pieces "gives" and leaves a button of metal on the other piece. These hourly test samples are kept on hand for a day or so as a running record of welding performance.

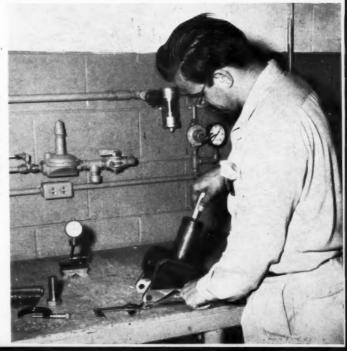
Of course, the two examples of quality control given above are only typical of the many that are done in a round of the plant by the inspectors.

On the tank assembly line the inspector checks the results of the air pressure tests with the control standards. From the records of this 100-per cent check, the quality control inspector can track down anything that may be wrong.

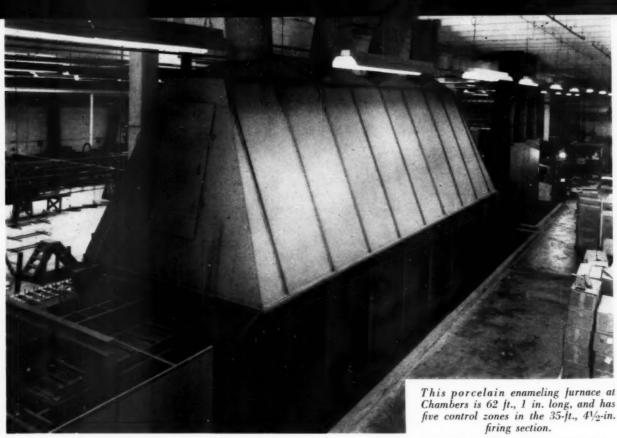
Although not mentioned previously, each of the quality control inspectors must gain the confidence of the foreman and the workers on the line. Each must be thoroughly familiar with the most incidental detail of the control specifications. Needless to say, a high degree of ability and knowledge must be a part of each inspector. This is essential because each of the inspectors must be fully trusted and respected by the majority of the employees. Proof that the inspectors are accepted by the employees is the fact that quite often one of the operators experiencing poor production results will call on the quality control inspectors for advice to guide him back to quality production.

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The statistical approach to inspection for quality is used in checking incoming materials and parts. A complete card file is kept on all materials and serves to aid purchasing in the future.



MPM DECEMBER . 1957



PHOTOS COURTESY INTERNATIONAL NICKEL CO.

Case history of a new-type porcelain enameling furnace

fired with natural gas, this year-old furnace in a range manufacturing plant employs 64 nickel-chromium high temperature alloy vertically-mounted tubes as its radiant heat source

THAMBERS Manufacturing Corpora-CHAMBERS Manuacanana oldest makers of gas and electric ranges, builtin ovens, and cooking tops. The company will be known to most MPM readers for the product built at its former Shelbyville, Indiana plant. Complete plant facilities for the 47-year old company were moved south to Oxford, Miss. In referring to this move, Paul Davis, plant production manager, stated, "We were aware of the many material advantages, such as natural gas, water, and power, as well as the availability of labor and the good climate. We chose Oxford for its accessibility, location, proximity to larger cities for source of supply of raw materials, and for the fine impression the community made on

Although the Oxford plant is Chambers' only manufacturing division, Chambers Ranges, Incorporated, the

sales subsidiary, is in Chicago, and the corporation also maintains an engineering laboratory for the design and testing of cooking units at Shelbyville, Ind. The laboratory is under the direction of John E. Chambers, founder of the company. Moving production south is in itself an interesting story, for the company was out of production for only sixty to ninety days during its move from Indiana to Mississippi. A training school was started at Oxford, and the new plant was actually producing a finished product when the official moving-in took place. During part of the moving period, fabrication of parts was scattered and assembly work done else-

Before moving to Oxford (site of the equipment described in this feature), the firm had used muffle-type furnaces for porcelain enameling. These furnaces were of brick construction, and it was

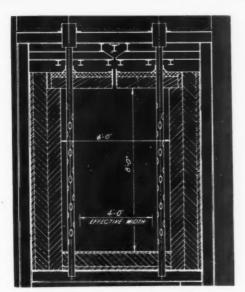
considered impractical to move them 600 miles to the new plant site.

New furnace selected

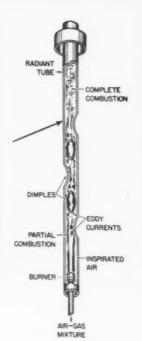
Chambers officials decided to select a more modern replacement for their earlier furnace equipment. The decision centered on a vertical radiant tube gasfired furnace having 64 vertical radiant tubes as the heat source. The tubes are a nickel-chromium high temperature alloy.

The furnace was designed to be capable of operating continuously at temperatures up to 2000°F. It is the first furnace of its type in Mississippi, and one of the first of its design used for porcelain enameling. It is designed so that the radiant tubes can be quickly replaced by lifting them out from the top of the furnace.

Each of the 64 tubes in the chamber furnace has a rating of 80,000 Btu's.



Sectional view of furnace showing location of radiation tubes. Measurements are not those of the Chambers installation.



Furnace interior showing some of the 64 vertical nickel-chromium alloy gas-fired tubes. Furnace is capable of continuous temperatures up to 2,200° F.

The furnace has a rated continuous production capacity of 4,600 lb. per hour of ware, tooling, and enamel. The working width of the furnace is 36 inches and the working height is 60 inches. Thus it can accommodate a 3 x 5-foot piece for enameling.

The unit is 62 feet, 1-inch in overall length. It has a 9-foot 4-inch preheat zone, a 35-foot $4\frac{1}{2}$ -inch firing zone, and an 18-foot $6\frac{1}{2}$ -inch "annealing" section. It is operated from 1,400 to 1,520° F., 8 hours a day, 40 hours a week. There are five zones of control in the firing section.

According to Mr. Davis, the new continuous furnace offers many advantages over the company's old muffle-type equipment. In this connection, he states, "Continuous operation gives us a very close temperature control and time exposure to heat by varying the speed of the conveyor — important to enameling. It's an extremely flexible furnace from an operating standpoint because it can be idled over night or over the weekend, if desired, or can be shut down completely without damage to the furnace.

"The operation appears very economical — much more so than for the old equipment. Also, we are able to transfer the work in process directly from the ground coat and finish coat conveyor, which is a definite convenience."

Flexibility for down time

According to Chambers officials, the new furnace design offers a desirable degree of flexibility for down time. The furnace is idled over night with a temperature from 800 to 1,000° F. Over the week-end, the temperature is cut

Drawing shows tube design. Tubes are fired at lower ends, and are removable through furnace arch without cooling furnace.

back to 800° F. In the event that production is "down" for a considerable time for work on the conveyor line, or for some other reason, the furnace can be shut off entirely without damage to the equipment. In this event, the procedure calls for gradual heat reduction, and then a gradual build-up for resuming production. If the plant were to be out of production for two or three days, as in the case of a long holiday week-end, the heat is maintained at idling temperature. The fuel in this instance is natural gas.

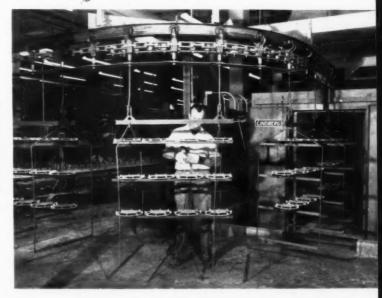
Being able to alter the temperature and even re-fire without damage to the furnace is an important advantage, according to the plant production manager.

Color is 30 per cent of production

The furnace is used for the production of all interior parts of ranges, built-in ovens and cooking tops, and components subject to heat or in contact with foodstuffs. This includes the oven liner, well liner and broiler, as well as the finish coat for all range exteriors, ovens and cooking tops, in white and one of five colors.

According to Davis, there is a big demand for color, and the demand is growing steadily. Currently it is about 30 per cent color for Chambers products.

Conveyor line leading into furnace. It has a rated continuous -production capacity of 4,600 lbs. per hr. of ware, tooling, and enamel.





CLEPCO Quartz Paint Ovens are based on the use of spe-cial CLEPCO Quartz Heaters designed to emit that part of the heat spectrum most readily absorbed by paints. Another major auto manufacturer reports that CLEPCO Paint Ovens are lower in original cost as well as in operating costs than the conventional gas fired convection ovens previously in use.

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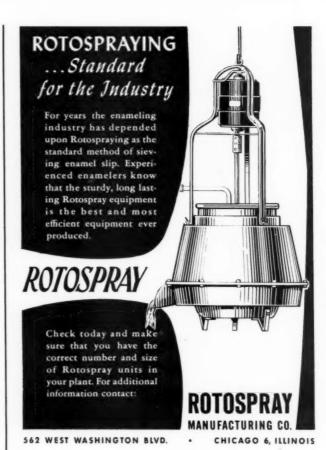


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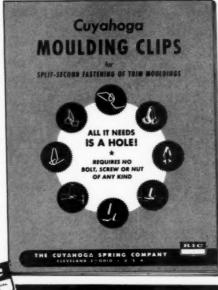


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The CUYAHOGA SPRING Co. 10200 BEREA ROAD . CLEVELAND 7. OHIO

Wash and wear — fact or fancy — theme of 11th home laundry conference

550 in attendance agree that this was the best and most interesting home laundry conference held by AHLMA; highlight was fashion show of clothing made of chemical textile fibers that are machine-launderable

EXCLUSIVE MPM PHOTOS

EMPHASIS was placed on machinelaunderable fabrics at the eleventh annual home laundry conference in Washington, D. C., November 1 and 2. Practically everyone agreed that this was the finest conference ever held because of the high quality of the speakers and the response of the interested audience.

The first session presented experts from the fibers and textiles fields speaking on "basic fiber characteristics affecting home laundering." Dr. George Wham, technical director, Good Housekeeping Institute, acted as chairman. George S. Buck, technical director of the National Cotton Council, spoke on natural fibers. Man-made fibers were covered by Dr. D. F. Holmes, textile fiber department, Du Pont. Fred Wedler, president of Burlington Finishing Company, a textile firm, spoke on blends of man-made and natural fibers. The director of research, Dr. H. Y. Jennings, Dan River Mills, spoke on weaves and chemical finishes. Arthur Wachter, converting relations department, American

Lou Snyder, Sales Training Manager, Whirlpool, spoke on basic principles of washers for the benefit of the home economists present at the conference.

Viscose Company, and Charles Dorn, textile consultant, spoke on launderable colors.

Making and buying well-constructed garments for home launderability were discussed by L. Richard Haspel, vice president of Haspel Brothers, Inc., and P. J. Fynn, director of research, J. C. Penny Company, respectively.

Home laundering in Europe

The luncheon session was keynoted by Ray Halvorsen, first vice president of AHLMA, and executive vice president of Hamilton Manufacturing Company, who introduced Mrs. Jessie Cartwright, home service director, Norge, and the U. S. A. home economics representative at Bari, Italy, 1957 International Trade Fair. She gave an interesting and, at times, hilarious account of her travels in Europe, visiting those who have much less than we in America. She told how Europeans are starved for information on any new and advanced subject, especially home laundering.

The following session was devoted to the latest accomplishments in home laundry appliances, and was highlighted by a survey by film of the basic principles used in home laundry appliances now on the market. AHLMA showed an outstanding film on how easy it is for the present day homemaker to expedite the family wash problem.

How the homemaker affects service

One of the most outstanding talks at the appliance session was by J. E. Jones, product planning manager of Hotpoint, in a talk on "service for home laundries." Jones led off with the lament that "blame the manufacturer" is rapidly becoming a national pastime and the sport of service for laundry appliances. He pointed out that the manufacturer is not desirious of making a device that will break down. Though not a typical experience, Jones mentioned that once



Jack Lee, Westinghouse, (r) is warming up his vocal cords for his talk on Your Future Home Laundry with his co-speaker Jack Kovas, Dole Valve, looking on in admiration.

a woman complained that her washer was not cleaning the clothes, and the service manager found that she was not using any soap. Amazing as it seems, this woman neglected to read her operation bulletin supplied with the washer. This, of course, is necessary in the successful operation of any appliance. The manufacturers feel that it is the homemaker's responsibility to read instructions and avoid abuse of a machine.

Your future home laundry

Jack D. Lee, manager of laundry equipment department, Westinghouse, and Jack Kovas, assistant vice president, Dole Valve Company, made several predictions for the type of machines that may be expected in the future. For instance, it was predicted that there will be a time when the entire washing cycle will be controlled by an electric eye or photocell arrangement which will constantly scan the clarity of the water. In this manner, the soil content of the to Page 87 →



Record attendance at 19th PEI shop practice forum

all-time high 273 registrations is an indicator of the success of this year's meeting

by John Sincere . TECHNICAL EDITOR

IF AN all-time high record attendance was any indication, the 1957 PEI Shop Practice Forum held November 6-8 was a big success. This year's meeting was held on the campus of the Ohio State University which, alternately with the University of Illinois, is host to the forum every two years. The highly-informative forum was smoothly conducted by Lew Farrow of Whirlpool Corporation's Clyde Division. Professor Maynard King of OSU capably handled the planning and arrangements that helped make this year's forum such a success.

There was a definite smell of roses at the famous intersection of Broad and High Streets at forum time. But by the time this is read, everyone will know the "who's who" of the bowl parade.

Address of welcome

Dean G. B. Carson of the University expressed pride in the fact that such a meeting is held at Ohio State, and welcomed the Forum to the university for future meetings. Jim Vicary, president of the PEI, spoke briefly to the forum participants telling of the great need now, more than ever before, for greater knowledge of porcelain enameling.

Symposium on firing

With Gene Howe of Chicago Vitreous presiding, R. F. Rush of Ferro began the first day's proceedings with a fine talk on "The Economics of Porcelain Enameling Furnace Operations." One of the many valuable ideas he mentioned was that when a furnace is being idled, a good economical temperature for this purpose is 200-250° F. below the normal operating temperature.

Besides proper selection of a furnace and the tools in relation to the ware being processed the most important factor in the economical operation of the furnace is the keeping of complete records of operation and maintenance costs.

"Modification of Porcelain Enameling Furnaces" was the subject of the talk by L. G. Huyck, Huyck Construction Company. He pointed out that the most difficult change to make in enlarging a furnace is widening. Lengthening the hot zone or raising the roof is not too difficult. Huyck cautioned the audience that labor costs for masonry construction are high and usually go higher proportionately when salvaged materials are used. About \$3000 is an average cost for raising a roof, while \$15-20,000 should be figured for lengthening a hot zone of a continuous furnace.

John Thompson of Briggs Manufacturing Company, in his talk entitled "Control Considerations for Continuous Gas-Fired Furnaces" emphasized the fact that complete recorded data is necessary to establish limits of operation that will be economical.

"Pyrometric Cones" was the subject of Linden E. Shipley's talk. Shipley, of the Edward Orton, Jr. Ceramic Foundation, told of the possibilities that exist for the use of these cones that are ordinarily used only in the firing of ceramic products such as bricks and pottery. The new cones, available in laboratory produced sample lots, are set up in metal



racks and give accurate results in five minutes from 932 to 1832 degrees F. These special cones are especially useful in finding the existing temperatures over an entire cross section of the hot zone of the furnace. This is something that is ordinarily quite difficult to do with available temperature recording equipment.

W. Clay, Kaiser Metal Products, H. F. Russell, Ingersoll Products Div., Borg-Warner Corp., and Rush Dale of Ervite presented progress reports of work that has been done in low temperature enameling. Most of the progress that has been made recently is due to the working experience of the plants running 1300 degree range enamels.

Metal preparation

J. E. Sams of Armco Steel Corp., conducted a fine session on base metals for porcelain enameling. The Hydrogen Treating Process was outlined by Jim Healy of A. O. Smith to make it possible to apply a bubble-free porcelain enamel. Cleaned or pickled steel is made the cathode in an electrolytic bath of an acid base or salt in which hydrogen gas is generated at the cathode when an electric current is passed between two poles of the cell. Seven per cent sulfuric acid is most suitable. After a controlled amount of voids or rifts are formed in the steel, most of the hydrogen is removed in a near-boiling water rinse bath. Neutralization is necessary for removal of the acidic steel surface. This process allows the use of nonpremium steel, suppresses fishscales, and allows the use of more corrosion-resistant ground coat compositions.

In a very interesting paper entitled



These happy looking fellows just finished the first session and they are as follows: l-r seated, John R. Green, Minneapolis-Honeywell; L. E. Shipley, Edward Orton, Jr., Ceramic Foundation; John D. Thompson, Briggs Manufacturing; L. G. Huyck, Huyck Construction Co.; R. F. Rush, Ferro; and, standing l-r, W. Clay, Kaiser Metal Products; Howard Russell, Ingersoll Prod. Div. Borg-Warner Corp.; Rush Dale, Ervite Corp.; E. E. Howe, Chicago Vitreous.

"Metallurgy and Welding Properties of Aluminum Alloys," R. J. Leipertz of Reynolds Metals pointed out the limitations and the factors affecting porcelain enameling of fabricated aluminum. It was a significant contribution to the knowledge of processing porcelain enamel on aluminum.

Application

Paul Thompson of Whirlpool enumerated the economic differences in the various methods of application; namely, electrostatic, automatic, and hand spraying and dipping. He pointed out that the quantity of production and the maintenance of the equipment must be taken into consideration before comparing methods, but that both hand and automatic spraying are much less efficient than the other methods of application. Of course, certain parts must be processed in the easiest way available, taking all factors into consideration, but automatic dipping and electrostatic spray application promise good efficiency if planned properly. Results were obtained by determining the per cent enamel applied to the ware, compared to the enamel used originally, simply by weighing the ware before and after the application of the slip.



MPM DECEMBER . 1957

the MPM



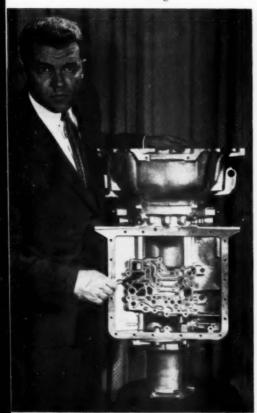
UNEXPECTED RESULT of a routine test in the research laboratory of Tennessee Eastman Co., division of Eastman Kodak Co., Kingsport, Tenn., is a new liquid adhesive which, it is claimed, has a combination of rapid set-time and high strength. It is anticipated that industrial applications for the adhesive will develop where extreme speed of setting and curing is needed, a necessity for bonding like or unlike materials not normally responding to conventional adhesives or cements exists, or where there is a requirement for high bonding strengths within the confines of small joining surfaces. In photo, fully-loaded automobile is supported by drop of adhesive on metal surfaces.

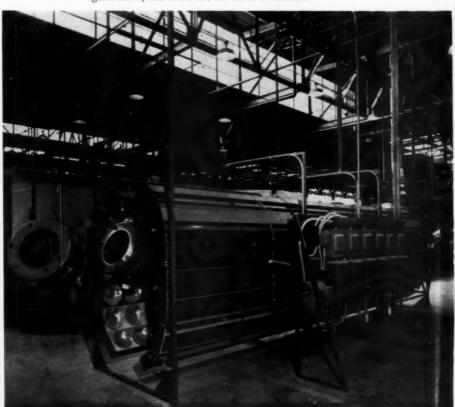


ALL-ALUMINUM vacuum cleaner, by Hild Floor Machine Co., Chicago, weighs only 19 pounds. For hotels, hospitals, etc., the Model 404 has a ³/₄ hp by-pass motor, and aluminum tank with nylon filter.

ALUMINUM TRANSMISSION, announced by Buick for some of its 1958 models, offers an idea for metal products manufacturing. The aluminum casting combines three formerly separate parts into a single permanent mold casting.

INFRA-RED OVEN, manufactured by Dry Clime Lamp Corp., Greensburg, Ind., is said to dry porcelain enamel faster on tubs and other parts. The "driQuik" electric oven shown is only 21 feet long, and is in operation at the Crosley division of Avco in Nashville, Tenn. The unit uses lava coated ceramic type infra-red generators, and there are no bulbs or sockets.





. foto-news



MOBILE DISHWASHER will, it is said, wash, rinse, and dry a full load of dishes in only 34 minutes. By Whirlpool Corp., the unit may be rolled to the dining area, and has interior of porcelain enamel.



PAINTING IN METAL is achieved through the use of steel, glass, and aluminum. Sculptor Rene Shapshak solders a stainless steel bridge girder in place while Artist-Designer Lumen Winter fits the span to a section of the 10-by-25 foot panoramic mural in the Pittsburgh Room of the Penn-Sheraton hotel, Pittsburgh. The mural features a stainless steel sheet sky and rivers, stainless steel wire and bar bridges, anodized aluminum sheet buildings and roadways, and glass end panels.

TEXTURED PORCELAIN ENAMEL stainless steel panels, manufactured by Seaporcel Metals, Inc., is being used in remodeling of a 12-story office building opposite Empire State Building in New York City. In blue porcelain enamel, 24-gauge panels utilize a honeycomb core backed by steel sheets. Type 302 stainless steel is used, and the texture creates an exterior convex pattern which casts highlights.

JUVENILE WATER COOLER, the Oasis by Ebco Mfg. Co., Columbus, Ohio, is designed exclusively for the youngsters. Children have easy access to water, as the cooler is only 34 inches high. The unit has a 5-quart reserve storage tank.





WHEN Pastushin Industries, Inc., Los Angeles, Calif., received a contract to produce thousands of practice bombs for military aircraft, one of the big production problems was how to finish them. The practice bombs are about 10 ft. long and 15 inches in diameter. Each bomb is a critical, allwelded sheet steel structure, demanding the same precision required of a "live" bomb to assure its accuracy when

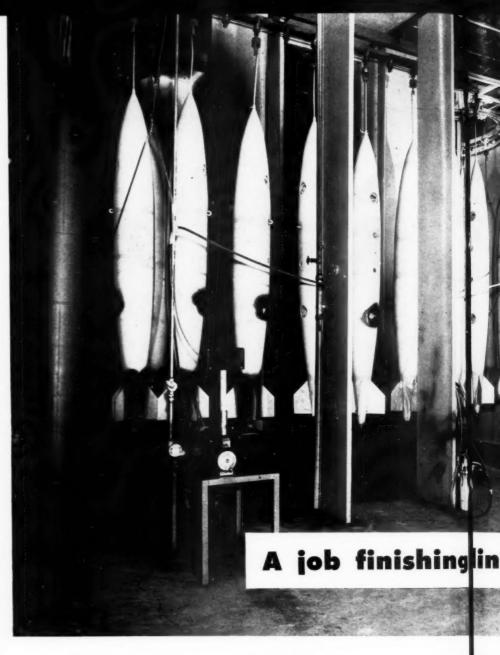
dropped.

Finish Specifications for the bombs required an internal wash coat of zinc chromate primer, followed by three external coatings - (1) wash primer and etch; (2) zinc chromate primer; and (3) black lusterless enamel-applied in that order. Suitable cleaning prior to applying the finish coatings was necessary. As with many ordnance items, the finish system had to provide adequate protection for indeterminate outdoor storage under any conceivable climatic conditions, as a corroded bomb would lose its accuracy (due to interference with smooth air flow around its contours) and would be worthless as a practice missile.

In planning the finishing installations for these bombs, Pastushin engineers were faced with the same problem that faces all jobbing manufacturers—there was no assurance that the bomb contract would be renewed after the first one was fulfilled. The next contract might call for an entirely different product. Therefore, any permanent and costly installation should be suitable for finishing other products as well. Specialized bomb finishing requirements would have to be accomplished by low-cost temporary installations, the cost of which could be amortized over the number of bombs

produced.

After due consideration of possible future uses, two major permanent installations were decided upon-(1) a large, fully-automatic and conveyorized degreasing unit which could be used for cleaning all types of products, and (2) triple electrostatic spray booths, located side-by-side so that the bombs could pass progressively through them to receive the required three-coat finish system. Temporary installations were planned for internal finishing, and for external cleaning of the bombs just prior to spray painting. These temporary installations were made along the final section of a conveyorized as-



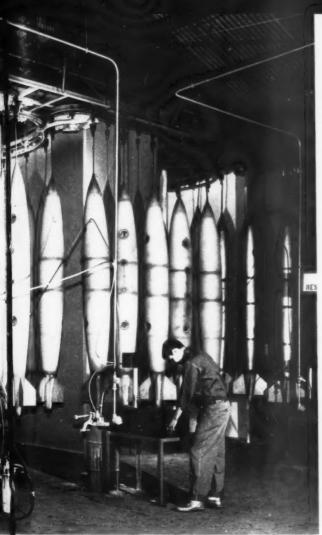
a finishing plant for production on a government contract can be pl

sembly line and blended with other production operations such as stress testing of the bomb hangers, and checking the weld seams in the bomb body for possible defects.

New heating system for degreasing unit

The large degreasing unit is used to clean the bomb sub-assemblies prior to final assembly. While conventional in itself, the degreaser incorporates a method for heating the degreasing solution (trichlorethylene) which will be interesting to many. It so happens that Pastushin Industries, Inc., also manufactures a new-type industrial steam boiler. One of these company-produced boilers was installed for heating. Instead of steam, a closed super-heated water system is employed. In this system, the water is heated above its normal boiling temperature, but under pressure so that normal vaporization and steam formation does not take place. This superheated water is then circulated in pipes through the degreaser solution to maintain the proper temperature.

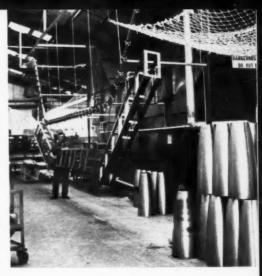
As an aside for those who might be interested in boiler heating of solutions, Pastushin engineers point out that the use of a closed, super-heated water system has several advantages over the use of circulating live steam. To begin with,



↑ These three electrostatic paint booths, each equipped with a unit having a 13-joot stroke, apply the three-coat exterior finish system in rapid sequence. Here, the cost of the installation and operation is justified by its versatility and adaptability to subsequent finishing operations.

While this conveyorized degreaser seems like an elaborate investment for bomb finishing only, it was installed because of versatility which will adapt it to subsequent job finishing.

FEATURE



This is accomplished with a temporary, low-cost installation consisting of an overhead, gravity feed primer supply tank, a dump tank, and a pump for transfering the primer back to the overhead supply tank. About 30 gallons of primer are admitted into the bomb through a filler opening especially provided for the purpose from the overhead gravity feed primer tank. The bomb is then "rolled" to "slosh" the primer over all portions of the interior. The filler cap is then removed and the opening is inverted over the dump tank. Most of the excess primer drains out quickly.

Immediately after dumping, the bomb passes onward to a station where it is filled with compressed air at 25 psi to check the weld seams. Here the "still wet" primer within the tank proves advantageous. If there is leakage through a defective weld seam, the air will force some of the primer through the leak, producing an easily noticeable stain on the external surface. A soap solution is used also on the weld seams as a double-check on weld quality.

After this air test, the external surface of the bomb is cleaned by hand washing with lacquer thinner. This again is a low-cost and temporary operation as the bomb has regular external contours and can be easily wiped by hand. In the next operation, the bomb is hoisted into a vertical position so that all liquid primer still remaining inside drains to one end. A hose is then inserted through the filler opening and the remaining liquid primer is pumped out. The bomb is then ready for final finishing.

Triple electrostatic booths

The triple electrostatic spray booths are located side-by-side and fed by a single continuous overhead conveyor. The units in these booths have a 13 ft.





by Gilbert C. Close . WESTERN EDITOR

can be planned to handle other products by combining equipment

as no vaporization occurs, the water level in the boiler remains constant and no water additions are required. Thus, after the contained water has circulated through the system a couple of times, it becomes literally "distilled" water, as all the solids and minerals are trapped out. This prevents the formation of boiler scale which reduces heat transfer efficiency and requires frequent cleaning.

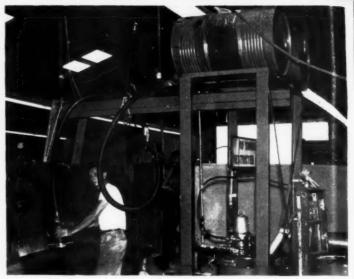
In addition, the super-heated water may be circulated through short pipe runs minus any pipe insulation, and with no more heat losses than will occur through a well insulated steam pipe. This reduces installation costs. Finally, because the closed, super-heated water system does not require constant additions, when it is used in conjunction with suitable controls, it provides a solution heating system that is fully automatic in operation and requires only routine maintenance inspection.

Interior finishing method

Along the practice bomb production line, the bomb components are first degreased, then joined together by circumferential welding. The completed bomb is then placed on a continuous conveyor for final operations prior to finishing. The internal wash coat of zinc chromate primer is the first finishing operation.



→ Hydraulic tensile testing machine used to test bomb hangers prior to finishing. Operation "keys" speed at which bombs enter final finishing line. → Checking weld seams on finished bomb. "Still wet" primer inside bomb is forced outward through any faulty weld, and appears as external stain.



Temporary, low-cost installation is adequate for finishing bomb interiors. Primer feeds by gravity into bomb from overhead paint drum. It is then dumped into a tank, and piped from the tank into floor level drum, then hoisted into overhead drum by a paint pump.

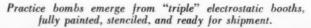


vertical stroke, said to be the longest stroke currently in use. Controls for the three booths are located on a control panel directly opposite their front so that the operator can observe progress and operate each control at exactly the right time. The booths may be used singly, in pairs, or all at once; thus, the installation is capable of applying a one, two. or three -coat finish system wherein the applied finishing materials will dry in the time required for the products to pass from one booth into the next. The metal crates in which the bombs are shipped, for instance, require only a two-coat finish system; therefore, only two of the booths are used when the crates are going through finish operations. Paint is supplied to the booths from 50 gal. drums, so during a changeover in any one booth, the only requirement is substitution of a drum containing the right type of finish.

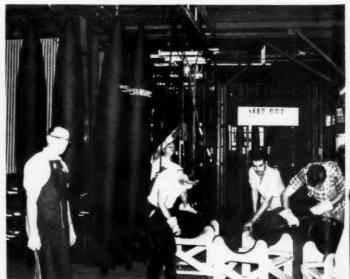
In bomb finishing, the overhead conveyor speed is set at 1-1/3 ft. per minute. The bombs are spaced on hangers located 18 inches apart. As the bombs emerge from the final electrostatic booth, they pass a platform where information required by specification is stenciled on. Beyond this point, the bombs are ready for crating and shipment.

The overall layout of the finishing line is entirely functional insofar as practice bomb finishing is concerned, yet all costly and permanent equipment can be used with equal efficiency in finishing other products. Cost of the specialized installations has been held to a level commensurate with the service they will provide in finishing the products covered in a single contract.

Bomb is hoisted into vertical position so that liquid primer still inside will run to one end. It is next siphoned out.











BEING RIGHT HAS NO-

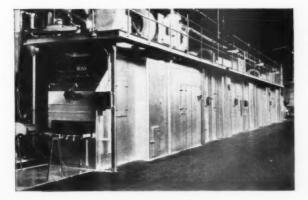
Our business is designing systems and manufactur-Ing units for drying, baking, curing, cooling, heating and other conditioning treatments where the operations are within an enclosure that must have just the right 'Atmospheric Condition'. In a very real sense, we are in the business of creating favorable atmospheres' in which to carry on operations and to produce endproducts of the desired quality at the lowest possible cost.

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39th National Metal Show biggest ever

exhibitors numbering 500 displayed products and techniques to over 50,000 metals industry visitors

CHICAGO became the capitol of the metals industry the week of November 4-8, and there was no doubt in the minds of every one who visited the show that this was the most successful ever held. The show started somewhat slowly, but the attendance bulged way above expected numbers during the latter days of the exposition.

More than 500 foreign visitors from 40 nations attended the concurrent Second World Metallurgical Congress and also visited the Metals Show.

Industrial buying teams converged upon the Show for careful weighing of hundreds of buying opportunities which opened as exhibitors unveiled the very latest in equipment and techniques for the fabrication, testing, measuring and handling of metals.

American Society for Metals, National Secretary W. H. Eisenman, managing director of the Metals Show, had files bulging with testimonials from past show visitors who commented that a Show visit is the condensed equivalent of a year's travel inspecting metals products and processes. The 39th Metals Show certainly dispelled any remaining shadow of a doubt that these claims were true.

Elect Canadian president

The first Canadian president of the American Society for Metals was elected, which is a first in the 29,000 member society's 44 year history. G. MacDonald Young was elected for the 1957-58 term. Mr. Young is the technical director of the Aluminum Company of Canada, Limited, Montreal.

Dr. Clarence H. Lorig, technical director of Battelle Memorial Institute, Columbus, Ohio was named vice president. Treasurer is now Robert H. Aborn, director of the Edgar C. Bain Laboratory for Fundamental Research, Monroeville, Pennsylvania. William H. Eisenman, national executive secretary of the society, is midway in his twentieth two-year term.

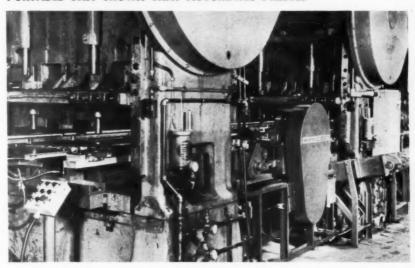
Free world brain power alliance

MPM DECEMBER . 1957

With the present surge of emphasis placed by government and education on the need for more technically trained people, it came at an opportune time that Secretary Eisenman proposed a plan to establish a "Free World Brain Power Alliance". Eisenman called for closer cooperation among metal scientists of the free world, closer and more frequent exchange of non-classified data. He reported the society's Board of Trustees will meet with representatives of the twenty overseas technical societies taking part in the Second World Metallurgical Congress, to discuss formation of a "brain power alliance" organization. Mr. Eisenman pointed out that this organization has official U. S. government backing.

The record breaking attendance of metal scientists from around the world was headed by the largest delegation from Great Britain with 95 registrants. Eighty-eight came from Germany, 65 from Japan, 42 from France, 29 from Sweden, 27 from Belgium, 19 from Switzerland, and 18 from Italy and 16 from India. A two-weeks tour of some 85 American metal working plants was made by the overseas conferees as a major part of the Congress. The tours preceded the Chicago meetings.

PORTABLE UNIT SHOWN THAT AUTOMATES PRESSES



A new, portable transfer unit which was shown at the Metals Show converted the standard stamping presses shown above into a continuous automated production line nearly 30 feet long at relatively low cost.

Fully automatic transfer lines up to 60 feet long can be built by combining these units with standard presses. Aluminum transfer rails with retractable pickup fingers move back and forth to transfer stampings from one press to another. Transfer distance can be ad-

justed from eight inches up to three feet or more. Pickup fingers are interchangeable to accommodate a wide range of stampings in different shapes and sizes.

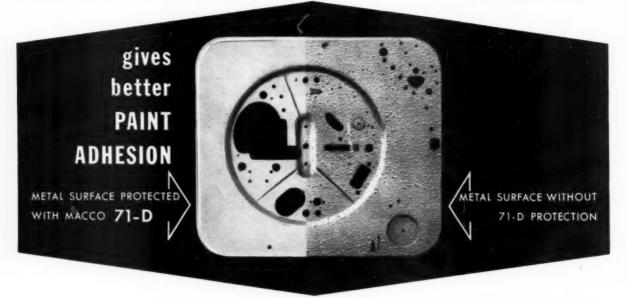
The reciprocating motion of the transfer rails is imparted by a compact drive unit located between the nearest and middle presses shown above. An electric motor in the base of the unit drives two cams to obtain the transfer motion. Write Technical Editor, Metal Products Manufacturing for further information.

MACCO MACHINE CLEANER

71-0

Prevents RUST SPREAD & BLISTERS

a phosphate cleaner and rust inhibitor



LEADING METAL PROCESSORS

Indorse its Use for . . .

- CAMERAS
- TV CABINETS
- APPLIANCES
- TAPE RECORDERS
- LAWN FURNITURE
 - MOLDING
 - TOYS, etc.

MACCO 71-D is by far the most efficient and economical method of preparing metals for the finest and longest lasting paint job. Laboratory and shop tests prove that, on steel, cast iron, aluminum or die cast, MACCO 71-D provides a corrosion-resistant phosphate coating comparable in quality to that formerly available only through expensive and involved methods of preparation.

MACCO M. C. No. 71-D CLEANER

- 1. Cleans metals and etches in one operation. 2. Is more economical because of solution's longer life. 3. Gives microscopic phosphate coating, greatly aiding in paint adhesion and corrosion resistance.
- 4. Requires no special equipment. 5. Never hardens in the drum.
- 6. Gives excellent protection against rust prior to painting.
- 7. Makes it simple to control solution. 8. Can be run in conventional one, two, or three stage washers, and in other types.



Manufacturers of Better Metal-Working Compounds since 1931 9210 SOUTH SANGAMON STREET • CHICAGO 20, ILLINOIS • PRESCOT 9-0800

Paint and varnish clubs meet

many fine papers presented at Philadelphia convention; exhibits for paint manufacturers interesting

THE 35th annual meeting of the Federation of paint and varnish production clubs held in Philadelphia in November featured the awarding of cash prizes for papers presented at the convention.

One of the most notable of these award winning papers was the first prize awarded to Harry Burrell of the Interchemical Corp. in Cincinnati for his paper entitled "A Solvent Formulating Chart." The awards were made by the Roon Foundation — newly established to encourage the entries of high quality papers in the paint industry.

Mr. Burrell's paper showed how a chart can be constructed which will present at a glance all of the pertinent data which must be considered when choosing a solvent for a given formulation. Several examples are given which show

how the chart can be used to solve practical problems quickly and easily, with considerable saving of man-hours.

Another feature of the convention was an address by Dr. Roger Lueck, v.p. of the American Can Co. on the general subject of industrial research. One of his contentions is that research should be an overall company activity.

"Corporation managers have a tendency to view industrial research as an activity, the interest in which should be confined to the four walls of the laboratory. If the research job is to produce technology needed by the company it becomes a responsibility of all departments. It is not in the corporation's interest to isolate the research staff and trust to luck that their developments will mesh with the company's technological requirements," Dr. Lueck said.



Gen. Joseph F. Battley, President of the National Paint, Varnish and Lacquer Association shown addressing the 1957 Annual Meeting of the Federation of Paint and Varnish Production Clubs.



MACCO MACHINE CLEANER

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Prevents RUST SPREAD & BLISTERS

a phosphate cleaner and rust inhibitor



LEADING METAL PROCESSORS

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An Unbeatable Combination That Gives You More Production At Less Cost!

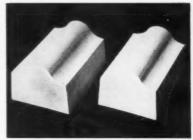
• This ball mill is being lined with McDanel Super High Density Brick. Notice the smooth surface and the broken joint installation—a time-proven method used by brick masons for centuries for greatest strength and durability. We've made and tested it for years. Customer satisfaction and repeat orders tell us that it's saving users time and money. McDanel Super High Density Brick is harder, stronger, more uniform and longer lasting. 1-1/2", 2", or 2-1/2" thicknesses available. Better check on McDanel Super High Density Brick today!

New McDanel Super High Density Grinding Balls

• Recent manufacturing changes, higher firing temperatures and a new, superior body formula give you a superior high density grinding ball that retains its shape and wears much longer than ordinary grinding balls. Complete vitrification means greater weight, more toughness, less pickup and faster grinding. Sizes 1/2" to 2-1/2". 3" sizes upon request. Available for any ball mill or lab jar application.

McDANEL SUPER HIGH DENSITY LIFTER BARS

Made of the same strong, long-wearing body as the high density brick. Aid in cascading ball charge for more efficient and faster grinding. Long-lasting. Specially designed and tested for proper contour.





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SPRAY PAINTING CATALOG

One of the things featured in this catalog is the 17½ lb. material handling pump which supplies up to four spray guns for a variety of spray painting applications. This new system is said to put the contents of a 55 gallon drum of paint at the operator's disposal. It delivers at the rate of one gallon per minute, and at no time is the drum itself under pressure. For further information, write Dept. MPM for bulletin No. 707, Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill.

CASTERS FOR APPLIANCES

Appliances are said to move more easily on casters from a company who has specialized in this field for many years. For dependable, easy, free movement, free swiveling casters are available. Any problem of mobility may be referred to these specialists in production of casters. Write for catalog from Dept. MPM, The Nagel-Chase Mfg. Co., 2817 N. Ashland Ave., Chicago 13, Ill.

MAXIMUM FINISHING OVEN EFFICIENCY

The title of this paragraph is the same as that of an interesting bulletin on finishing systems which answers six basic questions in installing any such type of equipment. These are: capacity, simplicity, handling, space, operational costs, and safety. Write Dept. MPM, Finishing Division, Michigan Oven Co., 411 Brainard Ave., Detroit 1, Mich.

CONTAINERS FOR EVERY SHIPPING PURPOSE

Every type of container is available from a firm which specializes in engineering packaging requirements for any application. Quality of manufactured products can be safeguarded by shipping them in specially designed containers. Maximum protection is afforded against any shipping hazard. Illustrated catalog can be obtained from Dept. MPM, Chicago Mill & Lumber Co., 33 S. Clark St., Chicago 3, Ill.

LONG LIFE SHADED-POLE MOTORS

A new booklet is available which contains drawings, technical data, and spe-

cific applications on shaded-pole motors which are said to last a long time. A new bearing design provides automatic, positive oil circulation even under high temperatures. The rotobracket is easily removed, so that the motor can be adapted to a variety of field applications. Range of 12 models is available to cover all types of applications. Write Dept. MPM, Controls Co. of America, 9559 Soreng Ave., Schiller Park, Ill.

ONE-COAT FLOWCOATING

It is now said to be possible to flow-coat paint in one coat without prior priming. Phosphatised metals can be given an excellent finish requiring little or no supplemental spray in just one operation, according to the manufacturer. A wide variety of complex parts with large surface areas can be successfully flowcoated with these enamels. For more information write for bulletin No. 216, Dept. MPM, Interchemical Corp., 224 McWhorter St., Newark 5, N. J.

NYLON BLIND SCREW RECEPTACLES

An easier way to speed production is claimed by the manufacturers of nylon blind screw receptacles. Locked in place by a thread-cutting screw, Plasti-Grommets provide a firm, durable vibration resistant fastener, according to the manufacturer. Send for brochure from Dept. MPM, Fastex, 195 Algonquin Rd., DesPlaines, Ill.

JOB STAMPING BROCHURE

Prompt quotations, reliable scheduling and follow-through are a part of the business the Detroit Stamping Co. is known for. Complete service facilities are available for producing job stampings to customer's specifications. Write for free brochure from Dept. MPM, Detroit Stamping Co., 404 Midland Ave., Detroit 3, Mich.

NEW PRODUCT MARKING METHOD

Nameplate markings designed for heat, abrasion, weather resistance, and new finishes are available. New heat resistant markings are available for wide variety of uses on metal parts. Write for data from Dept. 0-321, The Meyercord Company, 5323 W. Lake St., Chicago 44, Ill.

PREPLATED METALS

Intermediate steps of metal preparation are said to be eliminated by using preplated chrome steel and carbon steel metals for metal parts fabrication. These materials are readily worked with standard production methods, according to the manufacturer. Preplated finishes of chrome, nickel, copper or brass on steel and others are available. Write for booklet from Dept. MPM, American Nickeloid Co., Peru 11, Ill.

DIE CAST NAME PLATES

Three dimensional die cast name plates and decorative trim are available from a company who has long specialized in this field and who also offers complete design and production facilities. Die cast name plates are described in available information along with a free sample from Dept. MPM, LaFrance Precision Casting Co., 2003 South 29th St., Philadelphia 45, Pa.

FLEXIBLE BAND HEATERS

Flexible band heaters are available shipped to the user flat so that he may shape them exactly to his own requirements. They apply heat directly and efficiently to flat or irregular surfaces, according to the manufacturer. Nickel chromium resistance wire, mica insulation, and aluminized steel cases are available in various lengths, widths and wattages for all applications, either household or industrial. Write Dept. MPM, for descriptive literature, H. W. Tuttle & Co., Adrian, Mich.

ZINC COATED STEEL BOOKLET

A steel is available that is made by the continuous galvanizing process which is said to assure perfect skin bonding indefinitely. This zinc coated steel is said to stand up under the worst fabrication conditions that could possibly be given it. Write Weirton Steel Co., Dept. R-2, Weirton, W. Va.

DEBURRING WITH RUBBERIZED ABRASIVES

Four different grits are available from coarse to extra fine in the form of wheels, points, blocks, sticks and cones for machine or manual application in practically any metal grinding or finishing operation. They are available for the broadest range of hard and soft metals and other materials. They are used specifically for deburring, smoothing, cleaning and polishing operations after dimensional shaping. Send for comprehensive, illustrated catalog, Dept. MPM, Cratex Mfg. Co., 81 Natoma St., San Francisco 5, Calif.



SORENG STANDARD

SWITCHES

USED BY MAJOR MANUFACTURERS FOR OVER 4 YEARS

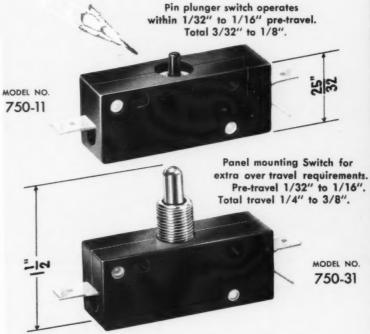
The Soreng line is designed to provide rugged, dependable switches for the broadest range of snap action switch applications . . . at a realistic cost. The features listed define the characteristics of long life inherent in Soreng Switches. For complete information, we suggest you consult with a Soreng engineer or write for technical literature.

Electro-mechanical Features

- · Instantaneous, positive make and break
- · High contact pressure
- · Non-sensitive to vibration and shock
- · Stable under momentary high overload
- · Available S P S T normally open or closed, or SPDT

Rating:

15 amp 125 V. A.C. 10 amp 250 V. A.C. 1/2 h.p. 125/250 V. A.C. Listed by Underwriter's Laboratories

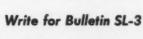




Lever actuating Switch for low operating force .

operating travel to 1/4" nominal







CONTROLS COMPANY OF AMERICA

Manufacturers of **SORENG** controls





Controls-for Modern **Automatic Equipment**



MODEL NO.

750-21









DULUX® meets the exacting requirements of today's topflight manufacturers



"DULUX" ENAMEL

Better Things for Better Living . . . through Chemistry

— America's leading home-appliance finish

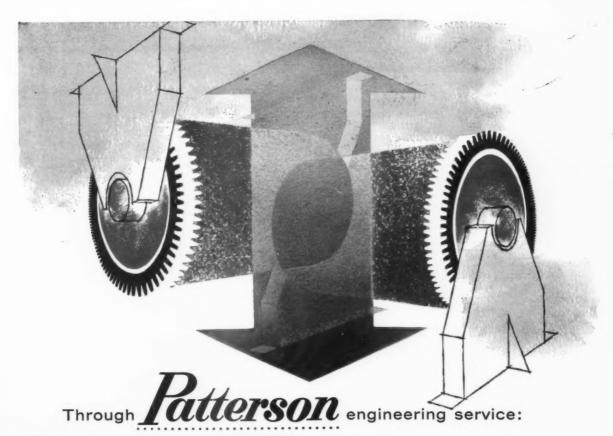
Over 53,000,000 major home-appliance units now in service are finished with Du Pont DULUX Enamel.

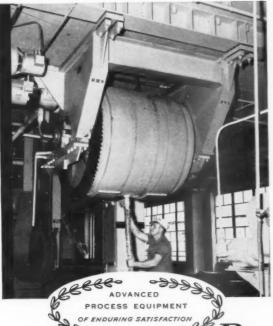
LEADING APPLIANCE MANUFACTURERS know that durable Du Pont DULUX is a finish of *consistent* quality. Every shipment of this fine finish meets the *same* rigid specifications. And that's just one of the important cost-cutting, sales-winning advantages that DULUX offers.

Constant research by Du Pont chemists has resulted in a finish that gives more rugged resistance to chipping, cracking, scratching and staining. Application costs are lower, too—without sacrifice of quality appearance and dependable performance.

DULUX keeps its flawless appearance after years of constant use in the home. Its easy cleanability, resistance to wear and long-lasting whiteness help build the continued customer satisfaction so vital to the success of any appliance line. No wonder so many of today's topflight appliance manufacturers use Du Pont DULUX Finishes.

E.I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington 93, Del.





BETTER GRINDING OPERATIONS

Wherever ball and pebble mills grind, new efficiencies can be developed by skilled operations analysis! For the paint industry, Patterson engineering service is available for complete millroom modernization surveys, including equipment relocation, materials handling improvements and all related factors—based on the experience of the Patterson organization in solving industry's grinding problems for more than 90 years. Let us arrange to have a Patterson engineer sit down with you for a preliminary discussion at your convenience, without obligation. Write us.

Tatterson foundry and machine company

⊕ A Subsidiary of Ferro Corporation
 ⊕
 East Liverpool, Ohio

THE Patterson foundry and machine company (canada) limited

Machine application of dry-drawing compounds

-> from Page 21

done after the sheets have been coated. This is done not more than four hours before fabricating on the presses. Roller leveling is done on all sheets that will be subjected to deep-drawing, such as roaster pans, refrigerator pans and doors, and the like. This is done to relieve stresses and strains, and to make the sheet more uniform in order to prevent breaking and wrinkling in the drawing operation.

The floor space required for the installation and operation of each of these machines is approximately 20 x 70 feet.

Advantages of using machines for application

Operation of these machines has resulted in several important improvements in the plant. For one thing, the maintenance of this equipment is very low considering the job that is done. The use of nylon in the cleaning brushes has greatly reduced maintenance. The advantages of the machines over hand application are as follows:

- a) Much less cleaning of dies and cleaning in press areas.
- b) More economical you can regulate the amount of material used more closely than with hand application.
- c) Makes sheets much easier to handle because they will slide without injury to the spray applied coating.
- d) Better and easier housekeeping coating isolated to one area rather than around the individual presses.
- e) Sheets can be stored for relatively long periods of time between coating and use.

A quality control program that really works

→ from Page 35

In sub-assembly, one of the essential steps is the bolting of the bottom pan onto the tank. The inspector checks to see that the bolts are tightened within the prescribed limits. Where the insulation is inserted, the inspector checks to see that every inch of the tank is covered with insulation of the proper thickness.

On the final assembly line, the inspector moves down the line to observe whether final dimensional tolerances are

being held within limits. He also checks to see if the positioning and alignment of the various parts are according to standards. In the flame test, he checks to see that the operator follows the prescribed control procedure.

Employee attitude tops

Employee morale is at an all-time high at Rheem as a result of this outstanding program. For example, one of the men in the shipping department called attention to the fact that water inlet and outlet nipples were slightly out of line. This would undoubtedly cause the plumber some inconvenience. The condition was immediately rectified as a result of his keen interest in quality. An employee in the spot welding department noted that he had been given parts made to an obsoleted revision. He could have used the parts and said nothing, but he immediately advised his supervisor in order to obtain and use the proper parts. These examples point up the acceptance of the quality control program at Rheem. If the employees themselves are convinced it's good, then think of the customers that will think so, too.



one-source production lines spark interest of volume producers...

The prospect of ordering an entire production line, ready made to produce a part to specification, has arrested the interest of many of the nation's top production engineers.

One source responsibility assuring better service; a line 100% harmonic, all stations engineered to work in perfect synchronization; integrated and automated handling of work in process; utilization of common drives and bases, reducing operating costs and floor area, are some of the advantages of the packaged line that has production people talking.

Federal/Warco pioneered the packaged line and have already produced automated lines combining such operations as blanking, forming, drawing, welding, machining, drilling, assembling on a common base.

For additional information contact the Federal/Warco representative nearest you or write direct.



This Federal Packaged Production line welds, spot faces, reams, de-burrs, sets six bolts and welds them in place . . . ejecting finished pedal brackets at a rate of 775 pieces per hour.

Federal Warco
PACKAGED
PRODUCTION LINES

THE FEDERAL MACHINE AND WELDER COMPANY - WARREN, OHIO

AFFILIATED WITH BERKELEY-DAVIS, INC., DANVILLE, ILLINOIS, MANUFACTURERS OF AUTOMATIC ARC WELDING EQUIPMENT.



Preparing systems tags efficiently

Method antiquates cumbersome and inaccurate hand-stamped production tag, upping production.

O'Keefe & Merritt Co., a Los Angeles appliance manufacturer, has solved, by use of a Dennison Dial-Set installation, the time-consuming job of preparing production tags.

Like many industrial plants, O'Keefe & Merritt required a systems tag to control the movement of materials through their production lines. As volume grew, the old-style hand-stamped production tag became too cumbersome and too inaccurate. At the current rate of production, two girls would be required for a full eight hours to prepare the old style tags for one day's production.

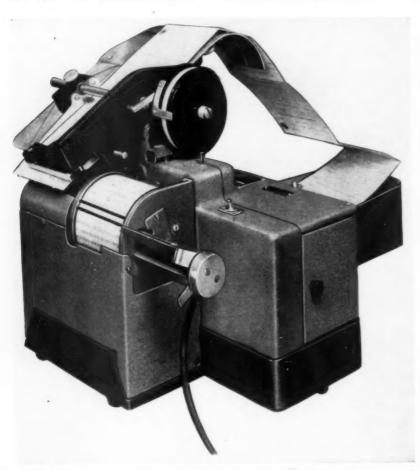
By installing a Dial-Set Printer and redesigning the production tag, one

girl can prepare all tags in only two hours. All hand-stamping has been eliminated and copy is rapidly set by merely turning a dial on the Dennison machine. The machine then feeds a continuous strip of tags — imprinting at the rate of 165 impressions per minute.

All information printed on the Dial-Set is descriptive of the type of stoves being manufactured, such as model number, style, color, total on order. As the appliance, with tag attached, proceeds along the production line, additional information is added to the various stubs — such as serial number, date of each operation, inspector number. The various stubs, upon detachment, are

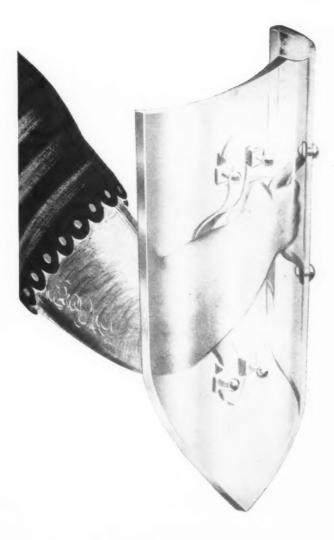
used for payroll, production scheduling, control of inventory, record of shipment, and identification for customer.

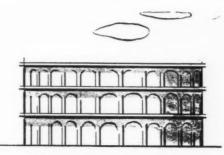
This installation is patterned after a similar one at the parent company, Tappan Stove Co., Mansfield, Ohio. It is quite typical of production and inspection control tags in the appliance industry, but may be applied to other industries as well. For more information, contact Dept. MPM, Dennison Mfg. Co., Framingham, Mass., or Special Projects Editor, Metal Products Manufacturing.



Dial-Set Printer prints at the rate of 165 impressions per minute, eliminating all hand stamping. Copy is rapidly set by turning a dial on the machine.

ASSEMBLY INSPECTOR			C	SERIAL NUMBER	
O'KEEI	FE &	MERRIT	T CO.	LOS ANGELES,	CALIF.
				MODEL	T. O.
Omnocionicaus conden-cased of manufactures BN CASE OF E	TH serior bell's and	LXG . E MANUFA E backed femily is the range, to g and finish. see refers the ta of a traust how give you a fire p EE.	ROT ACTURER'S a y a manufactury with you be highest a with your letter, for a proper redefine man which, if enything or	COPPER ALINE That deficits desire, have proclassed standards as of if purit have been test por to fought that, wrong they would be know	13
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56	18	LXG	ROT	COPPER	13
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this *Glass* shield,

while symbolic,

represents some of the things a master craftsman can do with glass. It can be bowed to fit any desired shape, it can be drilled and shaped to exact tolerances.

It can be tempered to impart extreme resistance to impact — that is why safety regulations demand glass as a safety barrier when danger exists.

Let glass improve the utility of your product while it beautifies it.



Let Marsco's craftsmen-engineering team impart to your product all the advantages of glass

800

Here are some of the applications for Marsco heat-treated, tempered and hardened glass parts:

- . CLOCK & TIMER CRYSTALS
 - KISIA
- OVEN DOORS
 RADAR EQUIPMENT
- . AIRCRAFT ACCESSORIES
- . PHOTOGRAPHIC EQUIPMENT
- . LIGHT LENSES
- . DIALS & NAME PLATES
- . TELEVISION EQUIPMENT
- . INSTRUMENTS
- . MEDICAL EQUIPMENT

Special shapes for: Instruments, Gauges, Household and Industrial Appliances.

MARSCO MFG. CO., 2909 S. HALSTED ST., CHICAGO 8, ILL.

Cools GRINDING BALLS Save time

save time save money

FOR ERVITE CORPORATION

"...save 45% on milling time!"

"When we purchase any new material which may affect the quality of our product, we ask ourselves these questions: Will the change save time? Will the change decrease costs? Will the change increase quality as well as production?

"In answer to these three questions, since changing over to Coors High Density Grinding Balls over five years ago, we can honestly say that their use has saved as much as 45% on valuable milling time, increased production as well as qual-

ity and, consequently, has saved us money. Can anyone ask more?"—Rush S. Dale, vice president and general manager, Ervite Corporation, Erie, Pa.

Ervite Corporation has five production mills charged with Coors High Density Grinding Balls.

Coors High Density Grinding Balls and Lining Brick are made isostatically of special alumina ceramic and fired at 2670° F. to a specific gravity of 3.4. These products can help speed your mill production.

For technical information please write: LZP INDUSTRIAL CERAMICS CO., 275 Kalamath St., Denver 23, Colo-

National Sales Representatives for

COORS PORCELAIN COMPANY

Manufacturers of High Density Grinding Media and Mill Liner Brick





KING-SEELEY CORPORATION ACQUIRES QUEEN PRODUCTS

A. N. Gustine, president of King-Seeley Corp., Ann Arbor, Mich., and F. A. Trow, president of Queen Products Inc., Albert Lea, Minn., announced recently that arrangements had been concluded for the purchase by King-Seeley of Queen Products and its associated company, the Albert Lea Building Corp.

King-Seeley is a leading supplier of speedometers, gauges, instrument panels, and other equipment for the automotive industry, and also manufactures power tools, domestic fans, and electrical control devices.

Queen produces ice-making machines, both cube and flake models; finishing and deburring equipment; camping equipment consisting of portable ice boxes, gasoline lanterns and stoves; and oil and gas heaters for domestic space heating. The ice-making machines are used extensively in restaurants, hotels, motels, etc., for better beverage service, as well as in supermarkets for refrigeration of meat, poultry, and produce.

LEWYT VACUUM CLEANER SALES UP OVER SAME PERIOD IN 1956

Vacuum cleaner sales for the Lewyt Corp., Long Island City, during August, September, and October increased 18.3 per cent over the same period last year, and matched the volume for the same three months in 1954, when the company introduced its machine on big wheels.

Henry Dorff, vice-president, said recently that company officials were "highly pleased" with the sales volume in view of the industry's 11 per cent decline during August, September, and October.

HOUSEWARES BUSINESS GOOD, NHMA REPORTS

The nation's housewares business is good, Dolph Zapfel, secretary of the National Housewares Manufacturers Association, said recently. He based his estimate of the industry's condition on manufacturers' applications for display space in the 28th NHMA National Housewares Exhibit to be held January 16-23, 1958 at Chicago's Navy Pier and adjacent Drill Hall.

"Applications for NHMA exhibit space have proved to be sound indications of business conditions throughout the industry," Zapfel said. "Requests for more space than manufacturers have ever before designated were received faster this month than for any show in housewares history. It looks now as though our January exhibit again will break all records."

FERRO'S NOBLE CHAIRMAN OF PEI'S NEW DIVISION



W. N. Noble, Ferro Corp., has been elected chairman of PEI's Friton-Steel division for 1958, it has been announced. Assisting him in directing the division's affairs will

be A. S. Ault, Chicago Vitreous Corp., who was named to the post of division vice chairman.

ARI ISSUES NEW STANDARD

A new standard for unitary air-conditioning equipment was published by Air-Conditioning and Refrigeration Institute. The new standard supersedes ARI Standard 2-10 (Self-Contained Air-Conditioners) and ARI Standard 620-56 (Published Ratings for Residential Air-Conditioners).

Numbered 210-57, the new standard applies to factory-made residential, commercial, and industrial air-conditioners or matched assemblies as defined in the standard, and includes performance and safety standards and methods of rating and testing.

Standard 210-57 provides that "Standard Ratings relating to cooling capacity shall be stated as total cooling capacity and expressed only in terms of Btu per hour; or equivalent tons, expressed in multiples of one-tenth of a ton (one ton being the equivalent of 12,000 Btu per hour)."

WESTINGHOUSE REPORTS SALES AT NEW HIGH

Net income of the Westinghouse Electric Corp. for the first nine months of 1957 was \$49,102,000, equal to \$2.83 a common share, Chairman and President Gwilym A. Price has reported to the board of directors. The directors have declared a dividend of 50 cents a share on common stock, and 95 cents a share on the 3.80 per cent preferred stock, both payable December 2 to stockholders of record November 8. Setting a new record for the period, sales totaled \$1,477,273,000, for an increase of 22 per cent over the record previously set in the first nine months of 1954.

SIEGLER CORP. DIVERSIFIES

The Olympic Radio and Television Division of The Siegler Corp. has been awarded a \$1,306,000 contract by the Bureau of Ships calling for the production of ultra-high frequency radio direction-finding equipment, according to John G. Brooks, Siegler president.

Olympic Radio & Television became a division of Siegler following the September 13 announcement of a two-fold merger of Unitronics Corp. and The Hufford Corp. into Siegler. At that time Unitronics, an outgrowth of the original Olympic Radio & Television, Inc., was parent organization to Olympic; the David Bogen Co. was acquired in January, 1956; and Presto Recording Corp., acquired in July, 1956. In addition to its military equipment production, Olympic makes television, radio, and Hi-Fi sets; and David Bogen produces high fidelity components; and Presto is a manufacturer of recording equipment.

The Hufford Corp. manufactures stretch-forming equipment and special machinery.

TAPPAN STOVE TO EXPAND AND DIVERSIFY PRODUCTION

Tappan Stove Company, large independent manufacturer of household ranges, is embarking on a broad program of diversification and expansion. according to W. R. Tappan, vice president and general manager of the 77-year-old firm.

Tappan's first major step toward diversification is an agreement to acquire Champion Molded Plastics, Inc., Bryan, Ohio. Champion is a large supplier of plastic components for the refrigeration and air conditioning industry. The company also manufactures plastic parts for automobiles, and radio and

television receivers, and produces a line of plastic toys and housewares.

The company proposes to increase the number of authorized shares from 750,000 to 1,500,000 and shareholders are also being asked to approve change of the company's name to The Tappan Company.

"Although Champion's present production facilities are not immediately adaptable to manufacture of plastic components for the Tappan ranges, we expect to utilize the company's broad experience in plastics in our continuing program of research and development on cooking appliances," Tappan stated.

"In the two years since we introduced the electronic range as a luxury item at \$1195, further research on this range has made us increasingly optimistic about producing electronic ranges for the mass market in the not too distant future."

Tappan's announcement of diversification plans was concurrent with a report of an all-time high in company ranges sales. September was the biggest month in Tappan history, and sales for the first nine months of 1957 are running ahead of last year. Tappan expects earnings for the nine months period to show a substantial increase over 1956.

Tappan recently completed a \$350,-000 addition to its Mansfield plant. The addition was part of a \$1,250,000 expansion program started in 1956.

In addition to its Mansfield plant, Tappan also operates a plant at Murray, Kentucky, Canadian Tappan Stove Company, Montreal, Canada, and a whollyowned subsidiary, O'Keefe & Merritt Company, Los Angeles, California.

PLANS MILLION DOLLAR ADDITION IN GLENDALE

General Controls Co. plans a million dollar addition to its present facility in Glendale, Calif. The company recently acquired Production Instruments Co. of Chicago, and expects its sales of industrial and aircraft products, air conditioning equipment, and electronic instruments to increase about 5 per cent over last year.

TRANE AWARDS CONTRACT FOR SOUTHERN PLANT

The Trane Company announced recently that it has awarded the general contract for the construction of its new plant at Clarksville, Tenn., to the low bidders O'Brien and Padgett, Memphis.

The new \$1½ million plant will manufacture central-type residential air con-



pliances is the built-in oven and the drop-in cook top. If you're going after this market, you'll want to know about Pyramin Stainless Steel Frames and Rims...Completely fabricated, ready to attach to your unit, they combine function with sparkling appearance designed to step up sales. Write for your copy of the Pyramid "Plan Book of Metal Mouldings"...today!

Pyramid Mouldings Inc. 5365 WEST ARMSTRONG AVE., CHICAGO 30, ILL.

NEW YORK CALIFORNIA

SEND FOR YOUR FREE COPY OF "PLAN BOOK OF METAL MOULDINGS"

No one connected with the design or manufacture of any appliance should be without a copy of this book containing hundreds of standard and special mouldings. Send for your free copy today.

	on, please send copy of letal Mouldings."
Name	Title
Firm	
Address	

ditioning units, marking Trane's entrance into this field.

According to Richard Schiewetz, general manager of the Clarksville plant, the contract calls for the completion of the 150,000 square foot manufacturing facility in 110 days, making the plant ready for occupancy about February 1. The new one-story building will be constructed on a 103-acre site about four miles northeast of the city.

EASY TO SPONSOR BING CROSBY TELECAST

The Bing Crosby Pro-Amateur Golf Tournament will be seen for the first time by millions of Americans when it is telecast live as a "golf spectacular" under the sponsorship of Easy Laundry Appliances.

The exclusive hour-long TV show will bring Bing and the entire roster of stage, screen, and sports personalities participating in the tournament to the CBS television network Sunday, January 12, 1958, from 6:00-7:00 PM, EST, Easy reports.

MAYTAG EXTRA DIVIDEND

On Nov. 7, the board of directors of The Maytag Co., Newton, Iowa declared a regular quarterly dividend of fifty cents a share, and also an extra divident of forty cents a share on Maytag common stock, both payable Dec. 14 to stockholders of record at the close of business Nov. 29.

This brings the dividend total declared on Maytag common stock this year to \$2.40 a share, the same amount declared during 1956.

PMI ELECTS

At the annual meeting of the Pressed Metal Institute, at the Castle Harbour Hotel in Bermuda, October 13-17, 1957, the following officers and directors were elected for the coming year:

President — C. E. Stryker, Maysteel Products, Inc., Milwaukee, Wis.

First Vice President — Carter Higgins, Worcester Pressed Steel Co., Worcester, Mass.

Second Vice President — Darwin W. Clay, Parish Pressed Steel, Division of Dana Corp., Reading, Pa.

Secretary-Treasurer — Bryant Gemmill, The American Stamping Co., Cleveland, Ohio.

Assistant Secretary-Treasurer — Mel Lorentz, HPL Manufacturing Co., Cleveland, Ohio.

At this same meeting, there was an election for the board of directors and they are:

Johan M. Andersen, Duplicon Co., CHICAGO TO HOST Inc., Westboro, Mass.

Russell E. Anger, Anger Mfg. Co., Detroit, Mich.

Seth G. Atwood, Atwood Vacuum Machine Co., Rockford, Ill.

Glenn Ball, Deerfield Mfg. Co., Mason, Ohio.

Melvin R. Blume, Wisconsin Tool & Die Co., Chicago, Ill.

C. R. Boeckler, Niagara Machine & Tool Works, Buffalo, N.Y.

Bernard L. Brierton, The Bostrom Mfg. Co., Milwaukee, Wis.

George H. Drayton, Jr., Philadelphia Specialty Div., The Budd Co., Philadelphia, Pa.

N. D. Dunlap, The Minster Machine Co., Minster, Ohio.

James A. Leake, The Leake Stamping Div., Monarch Products, Monroe, Mich. Stanley F. Paulin, Capital Metal Ind., Ltd., Toronto, Ont., Can.

F. F. Rimmler, Volkert Stampings, Inc., Queens Village, L. I., N.Y.

James McC. Sessions, J. H. Sessions & Son. Bristol, Conn.

M. A. Sherwood, Grand Haven Stamped Products Co., Grand Haven, Mich. Walter S. Sutowski, Freeway Washer & Stamping Co., Cleveland, Ohio.

P. C. Wood. Acklin Stamping Division, Tecumseh Products, Toledo, Ohio. Wilson A. Wright, Republic Steel Corp., Cleveland, Ohio.

NEW ELECTRONIC CENTER

FOR PHILCO

Construction has begun on Philco Corporation's new electronic research and development center in Palo Alto, Calif. The long range plans for the facility call for additions of 200,000 sq. ft. to the 50,000 sq. ft. presently under construction. Occupancy by 250 scientific and administrative personnel is slated for early next year.

TANK OF 150-DEGREE WATER IN TWO HOURS

A full 40-gallon tank of 150-degree water can be delivered in just two hours by the new Westinghouse "quick-recovery" water heater.

Frank Lowery, manager of the Westinghouse water heater department, declared the new unit heats water "six times faster" than standard electric water heaters. He said the cost of operation is the same as for a slower unit, the difference being the Westinghouse appliance uses electricity six times faster.

CHICAGO TO HOST PLASTICS INDUSTRY MEET

The Reinforced Plastics Division of The Society of the Plastics Industry, Inc., will return to Chicago for its 13th Annual Technical and Management Conference, February 4-6, 1958. Conference and an Industry Exhibit will be held at the Edgewater Beach Hotel, and will be open to non-members as well as members of the Society.

The "new and improved"—in materials, test results, quality controls, and processing techniques will be the basic theme for the 3-day, 18-session program. A new emphasis has been placed on relating these advances to end-use industries.

STEPHANY JOINS

JONES & LAUGHLIN

H. J. Stephany, for 15 years sales manager of consumer products for Geuder, Paeschke & Frey Co., Lebanon. Ind., has joined Jones & Laughlin Steel Corp. in a similar capacity. The announcement was made recently by C. K. Hubbard, general manager of J&L's Container division.

J&L recently purchased the Lebanon plant, which manufactures the Cream City line of galvanized ware and Met-L-Top ironing tables. The plant will continue to produce these products, and will be known as the Lebanon Plant of the J&L Container division.

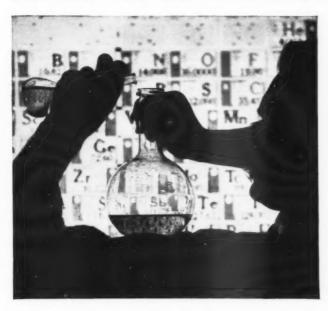
Stephany will have his headquarters in Lebanon, where sales offices of the new division have been established.

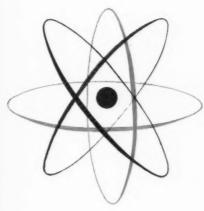
NEW PLUMBING-HEATING-COOL-ING BUREAU TAKES SHAPE

Development of an enormously expanded market for the products and services of the plumbing — heating — cooling industry was established as the goal of industry-wide effort inaugurated in Chicago recently.

Center of activity will be an organization composed of manufacturers, wholesalers, contractors, and journeymen. The organization will be achieved through expansion of the 38-year-old Plumbing and Heating Industries Bureau into the new Plumbing — Heating — Cooling Information Bureau.

Plans for this new and greatlyaugumented bureau, representing a fusion of the old bureau with the All-Industry Plumbing and Heating Modernization committee, were outlined to members of the Central Supply Association, which held its 63rd annual meeting recently in Chicago. FROM VITRO-another example of research at work for you...





NEW PORCELAIN ENAMELS FOR ALUMINUM

These new Vitro finishes offer many important new advantages plus new production economies. They're available in a full range of colors and in four different types—either low in lead content or entirely lead-free—to meet any production needs. They can be applied easily and economically on wrought or cast aluminum at temperatures ranging from 800° to 1000°F, will give you any surface texture desired from high gloss to matte, and are highly resistant to weathering, sulfides, acids and alkalis.

From the standpoint of economy, you can't beat Vitro porcelain enamels for aluminum. Their initial cost is surprisingly low; and they provide high opacity whether used for one or two coat applications. Also, they fire very uniformly and are lightfast and extremely durable. Use them and you're sure to lower your production costs and improve the quality of your products.

If you would like additional details on these new Vitro enamels or samples for testing, write us today. There's no obligation.



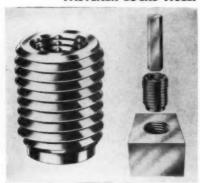
VITRO MANUFACTURING COMPANY • 60 Greenway Drive, Pittsburgh 4, Pa.

A Division of Vitro Corporation of America, West Coast Plant: 1625 West El Segundo Bivd., Compton, Cal.

New

Supplies and Equipment

THREADED STEEL INSERT FASTENER LOCKS ITSELF



An internally and externally threaded steel insert, that locks itself into the parent material at specified torque levels when driven, has been announced. The internal threads are hexagonally thrubroached the entire length of the insert to receive a hex-drive bar. The bar is the only implement needed to drive the insert, and it can be used in any hand or power tool, it is claimed by the manufacturer. For further information, contact Dept. MPM, Rosan Inc., Newport Beach, Calif. (Dept. 290).

WELD NUTS

These weld nuts are said to offer the following advantages: lightning-fast application; permanently positioned; and split-second assembly of product components because of pre-attached primary fastener. For samples and/or information, write Dept. MPM, The Ohio Nut and Bolt Co., 43 First Ave., Berea, Ohio.

LIGHT WEIGHT

STEP-DOWN PULLEY

A new step-down v-belt pulley, made entirely from welded pressed steel parts, has been designed for fractional horse-power use on appliances and other similar equipment. The construction offers lighter weight, greater rigidity, and eliminates the solid machined hub used in the construction of conventional step-down v-belt pulleys, it is claimed by the manufacturer. One section of the larger pulley is formed to make the inner half of the step-down pulley.

For further information, contact Dept. MPM, The Nagel-Chase Mfg. Co., 2809 N. Ashland Ave., Chicago 13, Ill.

SELF-ADHESIVE PRODUCT TRIM EASILY APPLIED

Gleaming product trim can be applied quickly and permanently when made of pressure-sensitive "Mylar," according to the manufacturer. Substantial cost savings can be made, it is claimed, because it can be used to replace metal



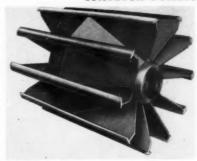
trim which often requires expensive stamping and forming dies, anodizing, etc. Application of the materials is made by peeling the paper off the back and pressing it into place. The ultra high-tack, pressure-sensitive adhesive sticks to any clean, smooth surface, it is claimed, and is as durable as the material itself. For further information, contact Dept. MPM, Fasson Products, 250 Chester St., Painesville, Ohio.

PNEUMATIC UNIT FOR SANDING AND GRINDING



A vertical pneumatic grinder which can be used for cup wheel grinding, sanding, or wire wheel work has been developed. Equipped with two handles, it is said to be easy for the operator to maneuver the grinder to keep it under control in any position and at any speed. For further information, contact Dept. MPM, The Airetool Mfg. Co., Springfield, Ohio.

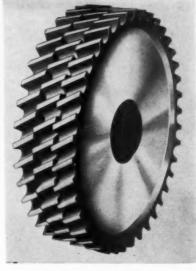
STEEL SELF-CLEANING CONVEYOR PULLEYS



Self-cleaning pulleys are said to insure longer belt life due to the self-cleaning cone design eliminating any material buildup between the belt and pulley, and preventing belt misalignment. For further information, contact Dept. MPM, Van Gorp Mfg. Co., Inc., Box 123, Pella, Iowa.

RUBBER CONTACT WHEEL FOR METAL GRINDING

A rubber contact wheel, for metal grinding and finishing, has been designed that will shape itself to the contours of the object being ground, according to the manufacturer. Deep serrations of the wheel will, it is claimed, conform to such difficult shapes as boat propellors, intricate automobile hardware, and many types of household items. For further information, contact Dept. MPM, Chicago Rubber Co., Inc., Waukegan, Ill.



our merry christmas wishpeace on earth
goodwill to men

PEMCO CORPORATION



INDUSTRY PERSONALS

Gordon D. Boyle, vice president of O'Keefe & Merritt, recently announced the promotion of W. W. St. Clair to general sales manager. St. Clair joined the sales organization of O'Keefe & Merritt in 1949 as a salesman in the Northern California area. Prior to this he was affiliated with General Mills in a sales capacity. Duties will include sales supervision over the newly-created washer-dryer division, in addition to the manufacturer's complete line of built-in and free standing gas ranges.

The appointment of Gordon G. Hurt as national merchandising manager for Norge Division, Borg-Warner Corp., Chicago, was announced by Harold P. Bull, vice president of distribution.

Hurt is responsible for merchandising activity in a total Norge home appliance advertising and promotional effort rated at nearly \$10,000,000 annually. He directs all phases of distributor and dealer promotional campaigns, and coordination and liaison of Norge merchandising with the sales, manufacturing, and advertising functions.

The appointment of Leonard M. Call as merchandising manager for the Airtemp division of Chrysler has been announced.

Call was formerly assistant advertising and sales promotion manager for the General Electric Air Conditioning division, Bloomfield, N.J.

Reese Lloyd, who is president of the Heintz Mfg. Co., Philadelphia, has been appointed vice-president of Kelsey-Hayes Co., Detroit, according to an announcement made by Perry Williams, president. Lloyd wil continue as president of the newly-formed Heintz division of Kelsey-Hayes Co.

George W. Myler has been appointed director of product planning for the Caloric Appliance Corp., Topton, Pa.

John A. Gilbreath has been appointed vice president of sales for Typhoon Air Conditioning Co., succeeding Mark E. Mooney; it was announced recently by Don V. Petrone, president of the Hupp Corporation Division.

Gilbreath brings with him 23 years experience in the air conditioning field. He was associated with Nash-Kelvinator Corp. for six years in field sales assignments. He also served for 13 years as manager of the air conditioning division of Servel, Inc. For the past four years he has held the positions of manager, packaged products department, and manager, wholesale department, of Westinghouse Electric Corporation's Air Conditioning Division.

Merrill L. Bengtson, president of the Hufford Corp., was elected to the board of directors of The Siegler Corp., Anaheim, Calif., manufacturers of electronic and heating equipment.

Hufford Corp. operates three plants in California and Illinois engaged in the manufacturing of special machine tools, ground handling and support equipment for the aircraft and missile industries, and materials handling equipment. The company recently was merged into Siegler.



BENGSTON

GILBREATH

Robert Paxton, 55, has been elected to the board of directors of the General Electric Co., and appointed to the new office of executive vice president-operations, Ralph J. Cordiner, president, announced. Paxton's election as a director fills the vacancy created by the resignation of Neil H. McElroy to be-

come secretary of defense. Arthur F. Vinson has been appointed vice president and group executiveapparatus group, to succeed Paxton, Cordiner said. Vinson, 50, formerly vice president-manufacturing services, has had 28 years of service with the company in engineering, manufacturing and general management positions.

Halbert B. Miller, since 1955 general manager of the home laundry department, appliance and television receiver division, has been elected a vice president of the company and appointed vice president-manufacturing services. Miller, 44, has had 21 years of company service in manufacturing and general management.

Cordiner also announced the election

of James H. Goss as a vice president of the company and his assignment as vice president and group executive-consumer products group. Goss was formerly president of Canadian General Electric Co., Ltd. Roy W. Johnson, with 10 years service as a member of the Executive Office in his 22 years with the company, will serve as vice president and consultant to Goss

Goss, 49, has served with the company 26 years in a variety of engineering, manufacturing and general manage-

The directors of the Canadian General Electric Company Ltd. have elected J. Herbert Smith as president and chief executive officer to succeed Goss, Cordiner said. Smith, 47, is a native of Canada, and has been with Canadian General Electric for 25 years.

Ernest C. Hungate has been named industrial air conditioning product specialist for the machinery and systems division of Carrier Corp., according to Hermann C. Hoffmann, general sales manager for the division.

Hungate has been serving in the application engineering department for the division, on the "Rotaspray Weathermaker" for air conditioning of factories. This central unit, which the company says has made all previous equipment of the type obsolete, provides close control of humidity and temperature while reducing maintenance.

Stephen B. Fuerst has been named consultant-manufacturing engineering research, manufacturing engineering service, in the General Electric Company's manufacturing services.

In announcing the appointment, W. W. Beardslee, manager-manufacturing engineering service, said Fuerst would be responsible for research in the field of advanced manufacturing techniques and procedures, and for keeping abreast of the latest developments in manufacturing engineering throughout the industry, as they are applicable to General Electric operating components.

The Pfaudler Co., Rochester, N.Y., has appointed Burton S. Payne, Jr. to head the metallurgical research and development group in the research division.

A graduate of Rensselaer Polytechnic Institute, Payne joined Pfaudler in June 1956 as a metallurgist. He is taking over the duties and responsibilities formerly held by Richard E. Avery, who is now doing quality control work on the staff of Works Manager E. W. Zoller.

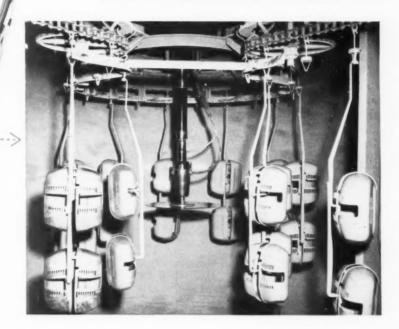
Reports 50% Paint Saving

with RANSBURG NO. 2 PROCESS

Electrostatic Spray Painting

That's because Ransburg No. 2 Process puts the paint on the product instead of up the stack

Aluminum housings, hung four to a fixture, are uniformly painted electrostatically as the conveyor makes a loop around the Ransburg reciprocating disk unit. Eight hand sprayers formerly were required to handle this work in Regina's finishing department.



The Regina Corporation, Rahway, N. J., replaced hand spray with Ransburg No. 2 Process to paint their twin-brush Floor Polisher and Scrubber, and their Electrikbroom.

Now, a single reciprocating disk unit automatically handles the work which formerly required eight hand sprayers. Even with increased production, Regina is using 50% less paint. Quality of the work is improved with maximum uniformity on all parts.

NO REASON WHY YOU CAN'T DO IT, TOO!

Want to know what Ransburg No. 2 Process will do for you in your finishing department? If your present production justifies conveyorized painting, let us prove the many cost-saving benefits which can be yours. Write for our No. 2 Process brochure which pictures many on-the-line examples of electro-coating on a wide variety of products, and describes our free survey service.

Kansburg ELECTRO-COATING CORP

Indianapolis 7, Indiana

RANSBURG

EWS about Suppliers

CONTROLS CO. OF AMERICA BUILDING NEW PLANT

Controls Co. of America recently announced plans for the building of a 50,000-square foot light manufacturing plant at North Manchester, Ind., to house operations transferred from its present Spring Valley, Ill., facilities.

Louis Putze, president, said a 10-acre site donated by the city has been prepared for ground breaking and the start of construction. Occupancy is scheduled for January, 1958.

The plant will be a one story, brick exterior structure and, when in full production, will house some 300 employees in the manufacture of timers and switches for the home laundry industry. The Spring Valley plant will be vacated and sold, Putze said.

Principal manufacturing operations of Controls Company are in its Soreng

Products division at Schiller Park, and A-P Controls division at Milwaukee. With completion of the new Indiana building, its other plants will be at North Manchester; Bellwood and Melrose Park, Ill.; Fremont, Ohio; Cooksville, Ontario, and Nijmegen, Holland. Besides controls for home laundry equipment, the company produces valves, switches, thermostats, and other controls for home heating, commercial refrigeration, and automobile air conditioning equipment.

HOMMEL HEADS CERAMICS ASSN.

At a director's meeting of the Pennsylvania Ceramics Association held at Mellon Institute, Pittsburgh, Pa., Ernest M. Hommel of the O. Hommel Co. was elected president for a term of two years. John Clark of Foote Mineral Co. was elected first vice president.

RECORD VOLUME FOR CURTAIN WALL INDUSTRY PREDICTED



The new Equitable Life Building in San Francisco, Calif. is an excellent example of modern curtain wall architecture.

With the evolution of architecture from the "Sculptural Look" of the Nineteenth Century to the geometrical simplicity of today, a new family of building products has been born. Curtain wall is the most significant of the newcomers.

Current industry estimates place annual curtain wall volume at nearly \$100 million — 600 per cent above the 1950



figure. By 1965, annual sales of the growing curtain wall industry will soar to over \$325 million, according to Kawneer Co., Niles, Mich., a leading manufacturer of building wall systems.

Curtain wall is best defined as an exterior non-loadbearing wall — or "skin" — consisting of panels attached directly to the building framework or to supports which are, in turn, attached to the framework. The exterior surface of the panels constitutes the building's facade.

FAIRMONT ALUMINUM OPENS CINCINNATI, OHIO OFFICE

Fairmont Aluminum Co., producer of aluminum sheet, coils, and circles, has opened a new Cincinnati, Ohio district office to service the company's customers in central and southwestern Ohio, southern Indiana, and the states of Kentucky and Tennessee, it was announced recently by L. M. Campbell, Fairmont sales manager.

Campbell also announced the appointment of A. Joe Snider as district manager in charge of the new Cincinnati office, which is located at 4200 Montgomery Road. Fairmont Aluminum Co. is a wholly-owned subsidiary of Cerro de Pasco Corp.

TAYLOR-WINFIELD BUYS STRUTHERS-WELLS FACILITIES

Announcement has been made by J. D. Anderson, president of Taylor-Winfield Corporation, Warren, Ohio, that the company has purchased from Struthers-Wells Corporation of Titus-ville, Pennsylvania, facilities and inventories used by Struthers-Wells in the design, manufacture and sale of their line of metal forming and work handling machinery.

This line of equipment includes: tangent benders, folding machines, punching and notching machines, roller table bending machines, tumble die bending machines, and other metal forming and work handling machinery.

Key personnel of this Struthers-Wells machinery activity have entered the employ of Taylor-Winfield. These men will continue to design, sell, and service this specialized line of equipment, the report states. Heading the group is Edward P. Schneider, assistant to the Chief Sales Engineer. (Formerly manager of Struthers-Wells Machinery Division).

This newly acquired equipment will be manufactured exclusively by Taylor-Winfield under their own brand name.

SHELL CHEMICAL TO BUILD NEW PLANT AT MARTINEZ, CALIF.

Shell Chemical Corp. announced it will build a new market development unit at Martinez, Calif. L. V. Steck, marketing vice president, said the new unit will make semi-commercial quantities of chemical products and thus facilitate the growth of new chemicals from the laboratory stage to commercial production.

MERGER OF MIDLAND STEEL AND J. O. ROSS APPROVED

A merger of The Midland Steel Products Company and J. O. Ross Engineering Corporation, two pioneers in their respective fields of operations, was approved by directors of both companies at separate meetings in New York recently, according to a joint announcement by Wade N. Harris, president of Midland, and Saxton W. Fletcher, president of Ross.

The two officials said that shareholders of each company are being asked to ratify the merger agreement at special meetings.

"When the merger is ratified, the combined company will be known as Midland-Ross Corporation, and will continue intact the activities of both



Midland Steel Products and J. O. Ross Engineering," Messrs. Harris and Fletcher said. The Corporation will operate four divisions, namely the Cleveland, Detroit, and Owosso (Michigan) divisions of Midland, and the J. O. Ross Engineering Division, which will include the Ross subsidiaries.

"The move marks an important forward step in broadening the operating base of the two companies by creating a combined organization with total assets in excess of \$50 million, annual sales of around \$100 million, and a much more diversified group of customers and industries to serve. The operations of our two companies are in no way competitive, and after careful study over a period of many months we are sure that this merger is in the best interests of our shareholders, employees, and customers," the two officials added.

STAINLESS INSTITUTE OFFERS "SILENT SALESMEN"



Automobile dealers are getting an assist from a new "silent salesmen," three-inch, three-color gummed labels.

Called "silent salesmen" by their creator, the Committee of Stainless Steel Producers, American Iron and Steel Institute, the labels are designed to help dealers capitalize on "the public"s proven enthusiasm for products made of stainless steel," according to Richard E. Paret, Committee spokesman. The labels call attention to the extensive use of stainless on every American make of automobile.

NEW PEMCO RESEARCH LAB IN FULL OPERATION



New building, devoted exclusively to research and development for Pemco Corp., which was completed recently. Representing an investment of more than \$750,000, the U-shaped building has triple the floor space of the old laboratories. It is located on a hill east of the main plant in Baltimore.

Completion of the new building devoted exclusively to research and development work for Pemco Corp. has been announced by Dr. George Spencer-Strong, vice president and director of research. The attractive U-shaped building, which lies on a hill east of the main Pemco plant on Eastern Ave., represents an investment of more than \$750,000. With 20,000 square feet of floor space, the new building has triple the space of the previous Pemco laboratories, which were located on Greenmount

Ave. near the downtown section.

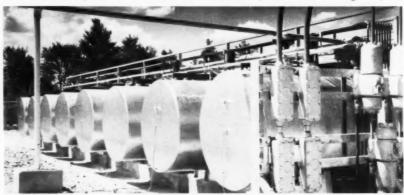
Pemco's new research building has seven completely-equipped individual enamel laboratories, plus large laboratories for the development of glazes, inorganic colors, and glass enamels. Other laboratories within the building are devoted to chemistry, physical measurement and testing, spectrography, and microscopy. Executive offices, a large conference room, and an ample library round out the completely-equipped new building.

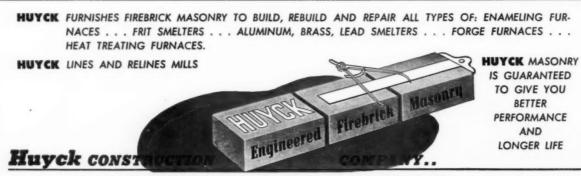
LILLY VARNISH OPENS NEW FINISHES PLANT

Lilly Varnish Co., of Massachusetts has started production in its new and modern finishes manufacturing plant in Templeton, Mass. The plant, which at present has an annual capacity of about a half million gallons, is said to embody the latest developments on automatic flow of materials, and uses the most ad-

vanced production equipment obtainable.

The plant was so designed that the output can be practically doubled with little additional expense. Each solvent tank in the tank farm has its individual pump which is activated by electric push buttons. (More news on Page 85.)









Korolite enamel makes the big difference with A. O. Smith PERMAGLAS water heaters. It's not only a matter of cosmetics, for Korolite versatility lends itself perfectly to one of the fastest water heater production lines in the country!

You'll want to know much more, of course, but A. O. Smith, and many others, use Korolite enamels because they meet exacting specifications for ease and economy of application, batch-to-batch uniformity, color and high gloss retention, resistance to humidity, chips, cracks, scratches, stains and wear.

You'll want to know much more too, about United's fast "demand" delivery service from 5 strategically located plants. Why not ask for one of our paint problem experts to call at your convenience, and without obligation. We'd like to tell you much more about Korolite, in person.

FIVE STRATEGICALLY LOCATED PLANTS

EAST Benjamin Franklin Paint and Varnish Co. Philadelphia, Pa.

SOUTHEAST Carolina Paint & Varnish Co. Greensboro, N.C.

CENTRAL Illinois Paint Works

Chicago, Ill.

WEST Pacific Paint & Varnish Co. Berkeley, Calif.

SOUTHWEST De Soto Paint & Varnish Co. Garland, Texas



WALLPAPER, INC. 1350 SOUTH KOSTNER AVENUE, CHICAGO 23, ILLINOIS • ROCKWELL 2-5000

SUPPLIER PERSONALS

Arvid C. Walberg has been appointed manager of the new Electrostatic Paint Spray Systems division of H. G. Fischer & Co., Franklin Park, Ill. Walberg was one of the pioneers in the development of electrostatic paint spraying ten years ago, and has since specialized in that field.

General Grinding Wheel Corp. has announced the election of Clarence Tolan, Jr. as chairman of the board of directors, and Jacob S. Disston, Jr. as vice chairman of the board of directors.

The board of directors of Armco Steel Corp. has elected E. A. Correa a vice president of the company, Charles R. Hook, chairman, announced recently.

Correa has been secretary and counsel of the company and will continue to hold those positions.

He graduated from Princeton University in 1924, where he was a member of Phi Beta Kappa, and earned his law degree at Harvard Law School in 1927.

Charles M. Schenck has become associated with the L. R. Kerns Co., Chicago, in the capacity of manager technical sales, rolling oils, according to a recent announcement. He was formerly connected with U. S. Steel Corp., having been located at the Fairless Works in the cold reduction department.



CORREA



SCHENCK

Election of Dale V. Cropsey as vice president in charge of industrial divisions for Elgin National Watch Co. has been announced by J. G. Shennan, president.

Cropsey's election follows his joining the firm last July as assistant to the president in charge of developing the industrial divisions. Formerly he was vice-president and director of sales for Potter & Brumfield, Inc., Princeton, Ind., relay manufacturers.

David H. Kinder has been named research & development chemist by Mac-Dermid Inc., Waterbury, Conn., manufacturer of metal cleaning, plating, and finishing chemicals. He will work in MacDermid's laboratory on a new line of chromate conversion coatings.

For six years prior to joining Mac-Dermid, he worked as a development engineer for Allied Research Products, Baltimore, Md., on the development of new chromates. He has been a control chemist for Pemco Corp., Baltimore, manufacturers of frits and pigments used in porcelain enameling.

David G. Collins has been named vice president of SpeedWay Manufacturing Co., Cicero, Ill., a subsidiary of Thor Power Tool Co., Chicago, it was announced by W. B. Scace, president of SpeedWay. Collins will be in charge of the firm's electric motor division. He has been sales manager of the Speed-Tool division since 1948.

In his new capacity, Collins will direct sales and a planned market expansion of SpeedWay's fractional horse-power electric motors for vending and business machines, applications which utilize small motor components.

Alexis J. Hannan has joined Ferro Corporation's Cincinnati sales territory as a sales-service engineer effective November 1. Hannan has been ceramic engineer for the Heintz Mfg. Co., Philadelphia, for the last five years. Prior to his position with Heintz, he had been employed at Kaiser Metal Products Co. and Pemco Corp. in various research, production, and quality control capacities. He is a graduate of Rutgers University.

At an executive meeting of Barnes Manufacturing Co., Mansfield, Ohio, and its affiliated companies, M. H. Pryor announced he was relinquishing his presidency to become chairman of Barnes' board of directors. Barnes has been a leading manufacturer of water systems and pumps since 1861.

Fred B. Hout, vice president—sales for the past 12 years, was named president of the firm, succeding Pryor, who has held the post since 1939. It was also announced that John A. Mintz, a director and treasurer of Barnes, has been appointed president of Barnes Holding Co., a unit of the Barnes group of manufacturing plants.

Jerome S. Stanford has joined Olin Mathieson Chemical Corp. as executive assistant to the vice president for sales of Olin Aluminum, Sam Gurley, Jr., vice president for sales, announced recently. Stanford had been vice president of Varcum Chemical Corp., Niagara Falls, N.Y.

He will assist in coordinating the Aluminum division's sales, sales planning, and sales services, and will be located at the division's sales headquarters in New York.





HOUT

STANFORD

The Youngstown Sheet and Tube Co. announced the promotion of two officials of its Campbell Works at Youngstown. They were: Ed O. Reese, general superintendent of flat rolled and tubular products, to manager, Youngstown District; and John H. Stone, assistant superintendent, Seamless Tube Mill Finishing Department, to general superintendent, flat rolled and tubular products, replacing Reese.

W. J. McCune, general manager of sales for the Sharon Steel Corp., announced recently the appointment of Henry A. Roemer III to the position of sales representative in the company's Chicago District sales office.

Roemer joined the Sharon Steel Corp. through the Fairmont Coke Works in Fairmont, West Virginia in 1952 as a sales trainee.

The promotion of key personnel in the sales department of Eastern Stainless Steel Corp., Baltimore, was announced recently by Richard C. Cunningham, vice president in charge of sales.

James W. Stottlemyer has been named sales manager, an advancement from his previous position as assistant to the vice president in charge of sales.

Also promoted were Martin J. Bartholomey, from inside salesman to assistant to the sales manager, and David E. Russell, from mill sales and operating supervisor to manager of customer service.



BOXES THAT NEVER STOP SELLING FOR YOU



Take this fresh look at your boxes: do they excite sales action for your customers? Do they project your trademark, stress product features, clinch sales? Let Gaylord specialists in design and printing go to work. They transform "just boxes" into active sales-builders. They do it for others—can do the same for you.

Call your nearby Gaylord packaging engineer to get things rolling.

CORRUGATED AND SOLID FIBRE BOXES . FOLDING CARTONS . KRAFT PAPER AND SPECIALTIES . KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION * ST. LOUIS

DIVISION OF CROWN ZELLERBACH CORPORATION



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DANA CHASE PUBLICATIONS

York Street at Park Avenue

Elmhurst: Illinois

editorial voice of the national safe transit program

devoted to improving packaging methods and shipping and materials handling methods for the appliance and metal products manufacturing industries. This section contains plant experience information and industry advances for the use of all executives and plant men interested in improving packaging and shipping methods and in loss prevention. The section contains complete information on the national safe transit pre-shipment testing program for packaged finished products and detailed reports of divisions and sub-committees of the National Safe Transit Committee.

INGENIOUS CRATE SAVES PACKAGING COST, WEIGHT



PHOTO COURTESY CHICAGO MILL & LUMBER

An ingenious sectional wirebound crate, entered by Haig E. Tashjian in the National Protective Packaging and Materials Handling Competition held at Atlantic City, N. J., Oct. 28-31, won first prize in Group III. Tashjian, of National Electric Products Corp., Linden, N. J., designed the container to protect the ends of low voltage electrical bussway components.

The wirebound design consists of several mat sections with standard type ends. The mat is somewhat different than normal in that the bottom of the mat is separate, with the top and two sides in a separate three-sided mat. The purpose of making the bottom in a separate section was to enable the bussway unit to be placed on the bottom so that the bussway and bottom could then ride the conveyor through the whole assembly line. At the end of the production line, holddown blocking

frames are placed over the bussway unit, the crate ends are inserted, and the three-sided mat section, comprised of the top and two sides, is then placed over the blocking frames and regular closures are made with the wires of the bottom.

The main advantage of this design is that, with only two sizes of mat sections, they are able to pack a great number of bussway units. The mat sections themselves are attached to each other by means of caylor loops. The parts that change with each bussway size are the blocking frames and the number of mat sections to be used. The container in the photo uses two of one size and a center section in smaller size.

Its flexibility, Tashjian said, has brought about packing cost savings ranging up to 49 per cent, and shipping weight reductions ranging up to 28.6 per cent.

BRAINARD STEEL DEVELOPS STRETCHER AND CUTTER

The Research & Development department of Brainard Steel has developed a new stretcher and cutter called Model 7C. This basic, heavy duty, drum-type tool has been completely redesigned and is available either with or without the cutoff feature.

It is used on 3/4" and 11/4" heavy duty strapping, and features of the new model, according to Walter Garrett, sales manager, are its lightweight, modern design, and a minimum of moving parts. Less operator fatigue and maintenance result from this new tool, it is claimed.

The new Model 7C augments Brainard's line of hand tools in the same manner that the recently-introduced PNE and PNC pneumatic stretchers augment Brainard's power tool line.

SPONSOR PACKAGING COURSE AT MICHIGAN STATE U.

Packaging, one of the newest and fastest growing curriculums at Michigan State University, is to be supported by a non-profit corporation recently organized for the purpose.

Packaging Foundation, Inc., whose trustees include three MSU officials, an industrial executive, and a trade publication editor, was organized to help develop the university program and a physical plant.

The corporation's stated legal purpose is: "To aid and promote, by financial assistance and otherwise, all types of packaging education and research at MSU of Agriculture and Applied Science, including full authority to receive donations, bequests, and devises."

Here's why Whirlpool uses International shipping containers



Special construction provides safe transit.

- Fast, easy packing assembly cuts down labor cost
- Dealers report refrigerators arrive factory-fresh in International's dust-proof containers
- Take less room store better
- Tube and cap design enables lift truck to handle easily without pallets... provides grip for easier handling by the retailer
- Large clean surfaces allow product identification and advertising

If you have a problem in container design, write for full details of our custom design service.



Quick assembly speeds up packing operation.



Lift truck inserts the lifting flange under one side of cap, pulls up. Strong construction enables sure, fast lifting, close stacking without usual jostling.







Outer container was removed for this photograph to show interior packing. Multi-ply blocks are fitted over top.



Here a sheet of die-cut corrugated board is being placed over the fountain as another step in the interior packing.

Packaging and handling.. Das

PHOTOS COURTESY HINDE & DAUCH

The four-color carton is placed over the assembled water cooler.

Bottom edges are then stapled to the wood pallet.



Container is closed, stapled and steel strapping applied. Coolers are then transferred to warehouse on wood skids.



80

DECEMBER • 1957 MPM

IN 1956, the Ebco Manufacturing Company of Columbus, Ohio built a new \$3,000,000 manufacturing facility that is considered an outstanding example of handsome design, modern manufacturing services, and employee facilities.

In this new facility, Ebco manufactures a complete line of Oasis electric water coolers and another complete line for Kelvinator. About two years ago the company introduced their new electrical appliance called the Hot 'N Cold. This appliance has the same function as a water cooler and, in addition, provides hot water for making instant beverages such as coffee, hot chocolate, tea, and also soups. It's purpose was to serve as an answer to the coffee break. Another Ebco product is the Oasis juice dispenser. The company also manufacturers Oasis and Kelvinator dehumidifiers.

Packaging at the Columbus plant is an important function as the products manufactured all have operating components that require protection and all units are of a nature requiring a high appearance factor.

Dasis water cooler

This photo-story concerns itself with the packaging and handling of the Oasis water cooler. The container pictured in this feature is an all-corrugated design combined with a wood pallet. The bright, four-color design of the container represents a refreshing departure from the conventional, and serves as an attractive traveling advertisement for the Oasis brand name. The container recently won an honorable mention in the surface design and printing division of the Fibre Box Association's 1957 competition.

From the assembly line

The coolers come to final assembly on a long roller conveyor line with the completed water coolers mounted on wood pallets. The entire cooler is built upon the condensing unit, the base of which rests on the pallet. From the assembly line, the cooler never leaves its pallet until it is "uncrated" and installed at it's point of destination.

From ten to twelve units are packaged at one time. Soft, pre-cut, blotter-like paper is placed over the chrome top of the cooler, and this in turn is covered with a wax paper bag. These combine to protect the finish. Multiply blocks and die-cut corrugated board are used for interior packing.

to Page 87 ->





"Say It Again" Mr. Johnson!



"STEWART-WARNER'S Heating and Air Conditioning Division, protects their warm air furnaces during shipment and storage with Chicago Mill E-Z PAK CONTAINERS," says Mr. Ted Johnson, during this on-thescene interview at the Lebanon, Indiana plant. "Damage to our furnaces in transit via carload, truckload, less than carload and less than truckload shipment is negligible since we have been using E-Z PAK tube type, cleated corrugated containers!"



"Chicago Mill containers enable us to stack our furnaces six high, saving valuable storage space for ourselves and our customers. Two men can pack, label and move these units to storage faster than they can come off the production line, eliminating production delays and tie-ups. Surfaces can be clearly and effectively printed, avoiding confusion and error in stock numbers and shipping instructions, as well as allowing for positive product identification."

LARGE OR SMALL - CHICAGO MILL MAKES 'EM ALL! A COMPLETE LINE OF CONTAINERS FOR EVERY SHIPPING PURPOSE!

FREE! Illustrated Catalog describing Chicago Mill's Shipping Containers and Services!



















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33 South Clark Street

Chicago 3, Illinois

PLANTS

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- . TALLULAH, LOUISIANA

Safe transit label has gained national and international recognition

THE distinctive red and yellow NST Label, which is being used at the rate of more than 12 million a year, has gained national and international recognition as assurance that the PACK-AGED PRODUCTS so labeled have been scientifically pre-shipment tested to withstand normal shipping and handling. The label serves as the working symbol of the Safe Transit Program and is the manufacturer's vehicle for telling carriers and dealers that he has done his utmost to assure the safe delivery of his products.

Evidence that the Label is commanding full attention is exemplified by the programs of the carriers to acquaint their personnel with the Label and the Program for which it stands.

The Association of American Railroads, for example, has publicized the NST Program in many ways to its individual member railroads, and they, in turn, to their handling personnel. AAR has used Safe Transit material in its educational seminars and has prepared and distributed several thousand posters calling attention to the Safe Transit Label for erection at freight houses and handling points. The poster reminds the shipping employees to "learn to recognize these requests" and "comply with our patron's wishes."

Similarly, the trucking industry has sent special bulletins to its people and written special trade journal articles calling attention to the Label. Individual trucking firms have featured the Label in their house organs and in bulletins to their employees. In addition, the American Trucking Associations, Inc., through its National Freight Claim Council, conducted a highly effective "Care Cuts Claims" program which was used by 160 trucking firms throughout the country. More than 1600 terminals -involving 60,000 employees-participated in this campaign which took the story of the Safe Transit Label directly to workers on the job.

Air Cargo Inc. and Railway Express in the same manner have emphasized the Label to their representatives through various educational means picturing the Label—and urging careful handling.

Added emphasis to the National Safe Transit Program and the allied label ac-

tivites is resulting from the interest of several branches of the U. S. Government in NST. These agencies are considering Safe Transit as an addition to their present purchasing specifications for major appliances and allied products. While the label is not necessarily required by the services, Government officials, nevertheless, recognize its importance, and have indicated that the label would undoubtedly be a favorable

factor for use by companies supplying products under these specifications, inasmuch as they have incorporated the NST test procedures in specifications.

Manufacturers have realized the benefits of using the label in promotional ways and are merchandising its meaning to distributors and dealers to indicate their interest in delivering their finished products damagefree and in "factory fresh" condition.

The "two-way street" of NST

by R. P. Carr . FRIGIDAIRE DIVISION, GMC; CHAIRMAN, CARRIER COORDINATION DIVISION, NATIONAL SAFE TRANSIT

THE National Safe Transit Program is a cooperative movement for reducing shipping loss and damage for major appliances and allied products. Since its inception it has been planned as a "two-way street" involving the cooperation of both shippers and carriers.

The Program offers assurance to shippers that if they will pre-test their packaged products according to certain established procedures, their packaging cost and their shipment losses and damages will be held to acceptable mini-

It is up to each shipper to decide whether he will use these test procedures, the program being entirely voluntary and implying no connection with tariffs, freight rates, claim procedure, or any other existent transit regulation. Paralleling the work of shippers is an equal opportunity for the carriers to improve handling by proper education of personnel and by keeping equipment in the best possible operating condition.

On the industry side of the street, NST has the backing of the eight leading associations representing the manufacturers of appliances and allied products, plus four associations of container manufacturers. Four leading technical and educational groups are also affiliated.

On the carrier side of the street are the three associations representing the Railways, the Truck Lines, and the Airlines, plus the Railway Express Agency.

The Carrier Coordinating Committee

is cooperating with the carriers through a planned program of publicity, educational films and folders, and is also promoting the plan in their contacts with shippers. First, we must acquaint the carriers with the full NST Program; once they are interested, the above items are available for them to take steps to educate their employees.

Most carriers are prompt in seeing the advantages since they have everything to gain and nothing to lose. The relief afforded their claim departments through a lesser number of claims is dollars in their pockets. Some carriers publish their own literature in order to cooperate with the plan, feeling that such expenditures are good insurance. Shippers also receive this literature. Shippers, too, welcome carrier cooperation. A good many ask just what the carriers are doing to parallel the shippers' efforts.

Most carriers express themselves solidly behind NST, but the carrier that actively and continuously promotes the NST plan gains the most. There is no question but that with continuous employee turnover, this plan must also be continuous as an educational feature and could well be integrated into their individual carrier damage prevention program.

NST has always endeavored to spotlight outstanding efforts of carriers giving due credit so that others might also benefit by adopting these outstanding plans and obtaining the results.

PACKING



FROM WIREBOUND



Double-Deck Crating for Windshields is reaching new savings high for glass industry. This "King-Size" box holds sixty wrap-around windshields—more than a ton of glass—and stacks three or more high. Safe packing is quick and easy; unpacking is just a matter of removing the front section. This new "double-decker" is another example of Wirebound engineering that has resulted in savings on: packing time, handling during warehousing and shipment, tare weight costs, and unpacking time.



"Long Ton" Package Has Long List of Uses. Packaging silicon metal and ferro-silicon exactly 2240 pounds to the Wirebound pallet bin, Keokuk Electro-Metals Co. has effected new storage, transport and handling economies. The open-top, one piece bin is nailed to a strong base, requires only moments to assemble, and permits easier storage, strict inventory control, "mixed" load shipments. At destination, loads are stored quickly according to grade and size . . . bin on bin. Some customers dump bin and all in furnaces.



New Bomb Crate Blasts Costs. Imagine saving \$20,000 a year simply from a change in packing. That is what happened when a contractor for 25-pound practice bombs switched from a heavy nailed wood box to engineered Wirebounds. First, the cost of packing was cut in half; then, by cutting tare weight from 13 to six pounds, freight charges dropped 11 per cent. Besides storing flat before assembly, the boxes need no nailing to close them and they can be stacked over 170 highl



Breakage Reduced 87% by Wirebound! Packing and shipping four to five thousand fragile glass tubes created a breakage problem only Wirebound engineering could solve. A special box was designed which created no new handling problems but cut breakage from 15 to 2% immediately. And, in addition, the new Wirebound crate decreased the cost of packing by 83% to effect a double saving. If you have container problems, call in an expert—your Wirebound man.

FREE BOOKLET ...
Packing is a skill and an art at Wirebound.
See what can be done ... what problems can be solved ... how
Wirebound applications can save tremen.

... what problems can be solved ... how Wirebound applications can save tremendously without sacrificing strength or protection. Write for 18-page "What to Expect from Wirebounds" or talk over specific problems with a Wirebound Sales Engineer.



WIREBOUND BOX MANUFACTURERS ASSOCIATION

Room 1154, 327 S. La Salle St., Chicago 4, 111.

THERE'S ALWAYS SOMETHING NEW IN WIREBOUNDS

ARMCO RECEIVES NASMD ADVERTISING AWARD

The National Association of Sheet Metal Distributors presented its first advertising award to a steel company to Armco Steel Corp., Middletown, Ohio, October 22.

Six major steel companies were considered in the final round of judging; other nominees had been screened earlier.

The initial award was presented to R. A. Dadisman, director of Armco's Market Development division, by Louis F. Demmler, chairman of the NASMD advertising awards committee.

HOMMEL HONORS FOUNDER

The late Oscar Hommel, founder of the O. Hommel Co., Pittsburgh, Pa., was honored recently when O. Hommel's "Ceramic Chemicals Fellowship" at the Mellon Institute of Industrial Research was changed officially to "The Oscar Hommel Memorial Fellowship".

In 1940, the well known Dr. E. E. Marbaker was appointed Hommel Fellow, producing many papers of importance to the entire ceramic industry. Under the guidance of Dr. John Cox, present O. Hommel Fellow, special developments will continue to achieve the Hommel policy — "to exert all efforts to insure the best products at all times."

SPINFORM, INC. ACQUIRED BY PANTEX

Acquisition of Spinform, Inc., Attleboro, Mass., specialists in forming and spinning all types and gages of metals and alloys, by Pantex Mfg. Corp., Pawtucket, R. I., was completed recently, according to an announcement by Norbert H. House, Pantex president.

The addition of Spinform, Inc., to the Pantex group, House said, will complement their increasingly-broad range of manufacturing facilities. No change of personnel in either company is presently contemplated, he added, other than to make such staff additions as increasing sales volume and market coverage indicate.

10 Page 87 →

G. E. ranges get the "face down" treatment

PHOTO COURTESY INLAND CONTAINER CORP.



Through re-design of the inner packing of range containers, waste space was utilized to the fullest extent in car loading.

AS MAJOR appliance manufacturers are well aware, household ranges were traditionally shipped in an upright position. As back panels on ranges became increasingly important as a part of modern design, the overall height of the product injected a serious shipping problem, as products more than approximately 42 inches in height cannot be loaded more than two high in standard cars. Such was the case with General Electric's ranges.

Loading only two high meant that the upper 22 per cent of each carload of ranges did not come close to meeting minimum weight requirements on which full freight was being paid. This posed a problem for G. E. packaging engineers, and for the supplier of shipping containers. After careful study, the packaging engineers came up with a design of inner packing to withstand hori-

zontal as well as vertical compression and to suspend the range in a manner that would avoid abrasion to the enamelled surfaces even when the appliance was shipped in a "lay down" position. A G. E. report states that this was done without appreciably adding to the cost of the container.

In re-studying container design, other objectives were also considered, such as adaptation to G. E.'s highly-automatic assembly and warehouse procedures, and the provision of adequate protection under all normal shipping conditions. As can be seen in the accompanying photograph, the ranges are now loaded with the two bottom tiers in upright position, and with the third tier loaded "face down". As a result of this practice, each carload of ranges now carries extra units that, in effect, ride to their destination "free".

General Air Conditioning Corporation protects its products against shipping hazards with Watkins Containers.





The Finest Products Go In Watkins Containers

They are preferred because of:

- 1. Low Cost
- 2. Stacking Strength
- 3. 75% Assembled-Upon Receipt
- 4. Ease of Assembly
- 5. Easy Handling
- 6. Minimum Storage Space
- 7. Protection from Dust and Dirt

THESE COMPANIES BUILD WATKINS CONTAINERS



Custom Protection . . .

THE WATKINS CONTAINER MANUFACTURERS

COZIER CONTAINER CORP. 446 East 131st Street, Cleveland, Ohio

CRATE-RITE MFG. CO. 1015 Orient Street, Oakland 7, California

DURA-CRATES, INC.
940 E. Michigan St., Indianapolis, Ind.
HEMB & MARTIN MEG. CO.

HEMB & MARTIN MFG. CO. P.O. Box 108, Murfreesboro, Tennessee ILLINOIS BOX & CRATE CO.

811 Center Street, Plainfield, Illinois KIECKHEFER BOX & LUMBER CO.

1711 W. Canal St., Milwaukee 3, Wis. LEWISBURG CONTAINER CO.

LOVE MFG., INC. P.O. Box 546, Wichita, Konsas UTILITY CRATE CORPORATION

UNION STEEL GETS WORK SIMPLIFICATION AWARD

The Union Steel Products Co., Albion, Mich., received national recognition recently for its participation in a work simplification program during the past year. The company, one of several so recognized, was honored with a "top award in a special category for training films."

Entries were submitted on 16-millimeter film, and show 'before' and "after" phases of improvement. The competition was designed to stimulate work simplification in industry, and to gain recognition for industrial engineers' roles in improving production standards.

Packaging and handling the Oasis water cooler

→ from Page 81

After the container has been placed over the water cooler, the bottom edges are stapled to the wood pallet. Steel strapping is then applied as the final packaging operation.

At the end of the packaging line, the coolers are placed on wood skids, four to a skid. The skids are then picked up by fork-lift truck and transferred to the warehouse where they are stored four high. Orders are drawn from this warehouse stock for shipment by rail car or by truck, with motor freight as the primary carrier.

Wash and wear -

→ from Page 39

water will determine the end of the washing cycle. As soon as the water rinses clear, the washing cycle is stopped. Water purification systems will be a possibility in the future, making only 25 gallons of water per week necessary to wash the entire family wash. The water will be re-circulated and purified after each washing cycle.

Another prediction is that memory tapes will be sewn into garments, and will be keyed to sensing devices in the washers that will automatically select the proper washing cycle and drying treatment.

A feature for dryers will be an automatic disposal device which will oxidize the waste at a non-combustible level. Another prediction is that a modern home will contain four or five small washing machines, located at strategic points throughout the house, each using a minimum amount of water and taking a minimum amount of time for completing the wash cycle.



for selling the key buying factors in the Appliance and Fabricated Metal Products Manufacturing Industry



Basic

Dasic . . . to reach and sell an industry whose importance in

the overall metalworking market can be seen in production and sales figures for 1956 (typical segments only):

Product	Units shipped	Retail Value
Air conditioners, room	1,770,000	\$ 495,400,000
Electrical appliances	79,942,000	\$5,191,351,200
Cooking & heating equipmen	t	
(non-electric)	9,570,988	\$ 730,000,000
Home laundry equipment		
(domestic only)	6,227,000	\$1,034,916,481
Plumbing ware	6,001,302	Not available
Steel containers	114,381,000	Not available
Steel kitchen cabinets	3,641,000	\$ 188,395,000
Vacuum cleaners	3,721,870	\$ 353,577,650

BASIC . . . because its circulation has grown with its field . . . is directed today to over 11,500 qualified readers — top management, purchasing, engineering, and key plant management and supervision — with circulation 100% verified under BPA audit regulations.

BASIC . . . because its complete editorial service "from raw metal to finished product" makes MPM the prime source of industry information for its qualified audience. MPM is now in its 14th year of service to the industry.

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"I saw your ad in MPM"

CLASSIFIED ADVERTISING

HELP WANTED

Ceramic engineer wanted for frit sales and service work with old, established frit manufacturing firm. Please send resume of experience. Box 12-A, Dana Chase Publications, York St. at Park Ave., Elmhurst, III.

APPROVE ROPER SUBSIDIARY SALE TO FLORENCE

The stockholders of the Geo. D. Roper Corp. recently approved the sale of its wholly-owned subsidiary, the Geo. D. Roper Corp. of Delaware, and the parent company's gas range and gas dryer business, to Florence Stove Co. The merger is expected to produce manufacturing economies and increase sales outlets according to John P. Wright, president of Florence. Stanley H. Hobson, president of the Geo. D. Roper Corp., will become board chairman of Florence, according to the announcement. Manufacture and assembly of ranges will be conducted at Kankakee, Ill., and for the time being at Rockford, Ill., as reported in the October 22nd issue of Metal Products Manufacturing's bulletin.

COMING!

A sandwich-type construction for refrigerator cabinets combining aluminum skins and "foam" type insulation — a radical change in the "materials" picture.

COMING!

A magnetic surface heating unit for domestic ranges designed to replace both conventional electric surface units and gas surface burners.

REPRINTS AVAILABLE

A STUDY OF THE CHARACTERISTICS OF ANO-DIZED ALUMINUM ALLOYS by R. V. Vanden Berg, Aluminum Company of America. Six pages — black and white. Covers a wide variety of surface treatments available for aluminum, and the many finish characteristics. 25¢ per copy.

Please send all orders plus remittances to: Customer Service Dept., Dana Chase Publications, York St. at Park Ave., Elmhurst, Illinois.

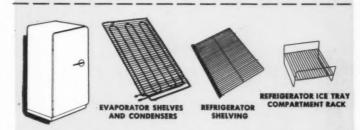
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Saving your dollars with wire is a 50-year old habit at Union Steel. Devising ingenious ways to shorten time between idea conception and delivery, creation of new designs in welded wire, engineering new methods for more rapid, economical manufacture . . . all are routine benefits you realize when you specify Union Steel, the experienced source that guarantees higher quality.

Remember, too-your appliance needs wire. Modern wire is the preferred material because of its styling versatility, strength, lasting beauty. Wire is basically essential to the appealthe sale and the continuous satisfaction of your appliance.

Our experienced design engineers and production specialists are ready to help you save with wire. If your problem is immediate, why not 'phone Union Steel today? Or, if you would prefer additional information concerning any of USP's varied wire fabricating facilities, please fill in and mail the attached coupon.









SWING-OUT REFRIGERATOR BASKET







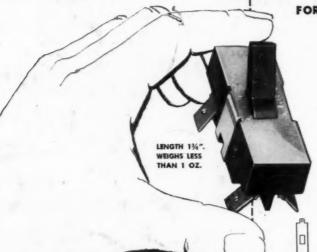




	PLEASE MAIL NOW!	GENTLEMEN: Please give us, without obligation, your suggestions for the use of fabricated and finished wire in our appliances.
Name		Title
ompany		
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New Exclusive TOGGLE SWITCH





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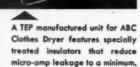
HEAT FOR DEPENDABLE OPEN COIL ELEMENTS



The design and manufacture of "open coil" heating elements has long been a major TEP service to the appliance industry. TEP has pioneered many new and exclusive features now used by leading manufacturers. Call or write today for TEP design and engineering assistance on any job. There is no obligation.

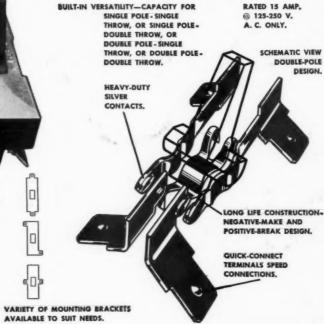
Heating element, manufactured for Maytag Automatic Clothes Dryer Unit, includes TEP exclusive "floating construction" design that allows unit to "breathe,"





"Floating construction" is also included in Lovell Dryer Systems, TEP "Shur-Lock" insulator supports also guard against dislocating and subsequent electrical failures.





Simplicity of Design Insures Long, Dependable Service at Lower Cost

The unusual simplicity of the new TEP Toggle Switch design achieved by Tuttle Research Engineers, now provides a dependable, top-quality switch at lower cost. Considerably smaller than comparative switches offering the same variety of contacts, it includes provisions for four-way wiring connections. There are only 11 working parts, and the complete switch weighs less than one ounce. Switch case and actuator are of durable Bakelite construction, providing adequate insulation from current carrying parts.

1/4 Million On-and-Off Engagements Without Failure

The new TEP Switch incorporates a negative-make and a positive-break design, and is constructed so that there is never less than two ounces of pressure on contact points. Tested on an automatic unit at 660 cycles per hour, 250,000 actuations have been recorded without failure. Further, the complete unit has proven stable under momentary high overload and is non-reactive to shock and vibration. Different mounting brackets can be provided to suit a wide range of appliances and instrument installations.

Write Today for Complete Data and Quotations.

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